



Financial Literacy and Retirement Planning in the Fiji Islands

**Master in Finance Dissertation
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Biography



Sheenal Pritesh Nand was born on 13 November, 1987 in Suva, Fiji Islands. He earned his Bachelor of Arts in Accounting and Financial Management and Information Systems from the University of the South Pacific in 2009. Straight after his first degree during the same year, Mr. Nand was formally employed by United Nations Development Programme (UNDP), an international NGO, in his capacity as an Operations Young Professional. In 2010, he was appointed as the Human Resources Assistant within the same organization and is currently employed in the same capacity.

In 2012, Mr. Nand enrolled into University of the South Pacific's MBA programme and amidst he was offered an Erasmus Mundus scholarship to pursue his Master in Finance studies in Portugal's renowned, University of Porto. Currently, Mr. Nand is on the verge of completing this two year programme at UP's Faculty of Economics (FEP). Upon successful completion, he will return back to his beloved country.

Outside of academics, Mr. Nand is very involved in FEP's activities. He is an active member of FEP Finance Club, a club run by master in finance students. Additionally, he is involved in tutorship programme where he assists foreign students to settle well in Porto and its academic lifestyle. Mr. Nand's outside activities include football, driving, enjoying Portuguese foods and not forgetting drinking the famous Portuguese black café.

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Abstract

In this era of globalisation, making a sound financial decision has increased to unprecedented levels. Thus, it is quite evident that financial literacy plays a vital role to determine financial behaviours and eases the complexity of financial decisions of individuals and households. However, amongst the many financial decisions that individuals make, prior research shows that many of these individuals possess limited and inadequate financial knowledge and skills to make responsible retirement decisions. Financial literacy also is increasingly becoming a critical part of policy agendas in enhancing financial sector stability and one of these agendas relates to retirement planning. Nowadays everyone faces the financial complexities of the modern world. Individuals are confronted to make financial decisions from a very early age and thus planning for retirement becomes more and more challenging.

This study focuses on how financial literacy relates to retirement planning in the Fijian Islands. The results from the sample reveal that financial literacy level is low in the Fiji Islands. In addition, only a little higher than two fifths of the respondents indicated that they have devised a plan for retirement. Strong evidence also exist that the young age group, least educated, low income earners and those not employed are among the vulnerable group and exhibit low levels of financial literacy and retirement planning.

JEL Codes: D12, D14, D91, H31, I21

Key-words: Financial literacy, retirement planning, relationship, pension, savings

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1. Introduction

Over the past two to three decades, individuals are being charged with the responsibility for their own financial wellbeing post their retirement. The governments around the world are more proactive than ever to assure that financial literacy programmes are adequate amongst its citizens to help them make well informed financial decisions. Thus, the necessity of financial education is increasingly becoming an important aspect of individual's life in relation to the financial products at their disposal. For instance, on a daily basis ordinary consumers must make extraordinary complex financial decisions, yet recent studies conclude that these complex decisions are made in haste without fundamental financial knowledge.

To be financially literate, one needs to have, if not advance but basic financial knowledge to be able to opt for the best alternative from a range of financial products. On the contrary, acquiring financial knowledge and getting well versed with the complexities of finance is likely to come at a cost. As from the past trends, where governments implement and manage retirement pension schemes, individuals tend to be more relaxed and devote little attention to their retirement plan details. But in this modern time, since the responsibility paradigm has shifted more on to individuals to adequately prepare for their retirement, the decisions to save, invest and accumulate wealth for a secured retirement are occurring in an increasingly personalized environment.

While much has been done theoretically and empirically on the economics of education, very little attention has been devoted towards the question of how people acquire and deploy financial literacy (Lusardi and Mitchell, 2013). Lack of financial literacy is one of the reasons why individuals do not engage in retirement planning. Financial literacy leads to well-informed financial decision making and ignorance of basic financial concepts affects retirement planning. Therefore, being financially literate means having *a combination of awareness, knowledge, skill, attitude and behaviour necessary to make sound financial decisions and ultimately achieve individual financial well-being* (OECD-INFE, 2011). OECD (2005) defines financial education as the process by which financial consumers/investors improve their understanding of financial products and concepts through information, instruction and/or objective advice and develop skills and

confidence to become more aware of financial risks and opportunities, to make informed choices, to know where to go for help, and to take other effective actions to improve their financial well-being. According to OECD-PISA (2012) Financial Literacy Framework, a sequence of visible events has led to the rising global interest in financial literacy adding this as a key life skill in individuals. Of the four¹ events outlined in PISA Framework, ‘risk shift’ is probably the most significant one in relation to retirement planning. In fact currently, governments and employers are transferring risks to individuals to take proactive responsibility to save for their own financial security after retirement. Even with this increased responsibility, most individuals are not aware of the risks that they have to confront and lack sufficient knowledge or skills to combat such risks effectively even if they become aware of them (OECD, 2008). State supported/defined-benefit (DB) pension schemes are being reduced and replaced by defined-contribution (DC) pension plans.

The objective of this study is in threefold. Firstly, to measure the level of financial literacy of the Fijian population (represented by sample) using the survey method that has been used around the world assessing basic concepts of interest rates, inflation and time value of money. Secondly, the extent of retirement planning done by the Fijians² will be evaluated. Lastly, this paper will address the relationship between financial literacy and retirement planning in the Fiji Islands.

¹ i) Risk shift; ii) Increased individual responsibility; iii) Increased supply of a wide range of financial products and services, and; iv) Increased demand for financial products and services.

² Fijian refers to the entire working population in Fiji. Also, citizens of Fiji are referred to as Fijians.

1.1 How this study Apply to the Fiji Islands Context? - Aim and Motivation

Fiji is a Pacific Island state with a total population of approximately 838,000 comprising of about 57% indigenous Fijians, 37% Indians and 6% other races. As of 2012 estimates Fiji's GDP stands to be \$4.250 billion with a Human Development Index of 0.702 (FBOS, 2007).

Sibley (2012), did a study on the financial competence of low income households in Fiji. The study was conducted through aid from Pacific Financial Inclusion Programme, The Reserve Bank of Fiji together with other concerned government ministries. The results of the study were alarming for Fiji. For instance, it was found that about 77% of iTaukei³ population expects to rely on their children after retirement and 60% of the Indo-Fijian population have similar expectations. Moreover, most believe that they would return to their village of origin and/or rely on extended family support during their retirement years. Results from the same study also concludes that close to only 10% of Indo-Fijian population and about 4% of iTaukei population amongst the low income households know about investing and diversifying their options for retirement wealth accumulation.

To date no research has so far documented how financial literacy relates to retirement planning in the Fiji Islands with internationally comparable indicators. Thus, this study will pertain to fill in this gap. The aim of this current study is to investigate the level of financial literacy and the extent of retirement planning done by the Fijian economy since evidence from Fiji indicates that there is a need to research and better understand the nature of the relationship between the two. This is supported by the current study where we find that only around 24.3% of the sample respondents signify to be financially literate. This rate is not impressive and therefore financial literacy rate is low. In addition, we find that some 43% of the claim to be planners for retirement. These results point to a positive link between financial literacy and retirement planning in the Fiji Islands. Hence, it is aimed that the findings of this dissertation paper will expectantly form the basis for future studies in Fiji Islands planning in order to develop frameworks, improve policy targeting and advocate awareness of this dissertation theme.

³ iTaukei is referred to the indigenous ethnic group of Fiji Islands and the Indian ethnic group are referred to as Indo-Fijians.

1.2 The Fiji Pension System

The principal role of any pension system is to accumulate wealth and benefits for retirement. The Fiji National Provident Fund (FNPF), established in 1966, is a retirement savings fund in Fiji which takes mandated contributions from employees and their employers and accumulate them into retirement wealth (FNPF, 2013). The FNPF shares a similar approach to various other pension funds such as the Singapore Central Provident Fund and the Malaysian Employees Provident Fund.

FNPF covers employed workers aged 15 to 55, except members of equivalent private plans approved by the FNPF Board. The fund also encourages voluntary coverage schemes available for self-employed persons, domestic workers, students and informal sector workers. For the employed workers, it is compulsory to contribute the mandatory amount of 8% matched by another 8% from the employer up to age 65. Fiji's formal retirement age set by law is at 55 years while employees at private firms have the option to retire up to 65 years. Funds are only available to the members at the age of 55 therefore members can either opt for a lump sum withdrawal, term annuity or life pension. Other benefits provided by FNPF include Retirement, Permanent Incapacity, and Survivors Benefit in case of death of a member, housing, education and medical assistance schemes.

In 2012, FNPF went through a pension reform to address the long unresolved issues of pension sustainability. The FNPF Decree 2011 provided the framework for implementation of the restructuring of the pension scheme to a sustainable platform. The issues in the FNPF pension system arose due to shortfall in pension income against the pension payments FNPF was liable to make to its pensioners. Thus, to make up for the short fall would mean that the current members' savings would have been used to make up for the shortfall. In March 2012, the issue was addressed with the new pension reform through adaptation of actuarially fair age-based pension conversion rates. The old pension business was terminated to effectuate the new scheme. Existing pensioners were provided the opportunity to re-exercise their pension options based on their initial pensionable amounts. These options included life pension and term annuity products under the new scheme, and lump sum withdrawals (FNPF, 2013). With these options in place some 18% of the pensioners chose to fully withdraw their savings and exit the

fund. This is just one of the many examples which show that the workers and retirees face significant challenges to act and decide on the complex financial products and policies required for retirement planning. Either way, through the historic 2012 reform that FNPF underwent, it became apparent that it was increasingly imperative for households and individuals to begin re-thinking about their retirement savings and to do so one needs to maintain or acquire the necessary financial skills.

This paper proceeds as follows: Section 2 presents the review of literatures and the rationale behind the importance of financial literacy and retirement planning. Section 3 presents the empirical study followed by findings on financial literacy and retirement planning in sections 4 and 5. Section 6 has the concluding remarks of this study.

2. Literature Review

The life cycle consumption model, in its simplest version, without bequests and uncertainty speculates that households can accumulate savings throughout their working careers until their retirement and then wealth tends to decline thereafter (Modigliani and Brumberg, 1954). But in today's era, amidst the ongoing global financial crisis, financial literacy has come to the limelight of policy agendas in enhancing financial sector stability and one these agendas relates to wealth accumulation of individuals and households for a better retirement planning. For this reason, this financial age is quite demanding in terms of becoming financially literate, learning how to process economic information and making well informed decisions about individual and household finances (Lusardi and Mitchell, 2011b).

There is a growing body of literature that measures financial literacy and the extent of retirement planning around the world. The most recent study by OECD, 'Pensions at a Glance Asia/Pacific 2013', states that many Asia/Pacific economies face a problem of adequacy of retirement incomes (OECD, 2013b). The four basic reasons to underpin the statement given by OECD are that coverage of formal pension systems is relatively low; withdrawal of savings before retirement is very common; pension savings are often taken as lump sums with the risk that people outlive their resources (as it happened in Fiji in 2012) and pensions in payment are not automatically adjusted to reflect the changes in the cost of living (OECD, 2013b). The transition between working life to complete retirement involves making complex decisions such as income needs after retirement, safeguarding the retirement wealth, employer pensions, national pension schemes and whether to stay in the workforce or exit the labour market. Such decisions many at times are irreversible and can have long term implications during the retirement period. Therefore, in order to make the best choices, individuals need to possess sufficient level of financial literacy in order to help execute retirement plans successfully.

The importance of financial literacy and the need to get well versed with the retirement programs cannot be taken for granted. In order to formulate retirement plans successfully, individuals need to get skilled and understand certain elements of financial mathematics and investment concepts such as compound interest, discounting future

cash flows, effects of inflation, risk and return tradeoffs and diversification (Clark, 2012). Sound financial decisions often become difficult without a thorough understanding of financial concepts. For instance, in the United States a National Financial Capability Survey concludes that many Americans do not possess key knowledge of financial concepts and as a result fail to plan for retirement (Lusardi and Mitchell, 2011a). The essence of financial literacy has been increasingly demanding in recent years due to the development of financial markets, demographic, economic and policy changes.

The need for financial education is increasingly being recognised in relation to all financial products. Significant focuses have been diverted on the growing need for financial literacy in relation to retirement savings (OECD, 2005).

2.1 Financial Literacy: The conceptual framework

Over the years, developed and emerging countries have come under scrutiny giving thorough concern about the level of financial literacy of their citizens. It has also been realized that amidst the challenging economic and financial context, lack of financial literacy is one of the key factors contributing to ill-informed financial decisions which in turn has negative consequences on the society as a whole. As a result, financial literacy is now globally acknowledged as an important element of economic and financial stability and development (OECD-PISA, 2012). Financial literacy, on a broad definition as defined by OECD, *is knowledge and understanding of financial concepts and risks, and the skills, motivation and confidence to apply such knowledge and understanding in order to make effective decisions across a range of financial contexts, to improve the financial well-being of individuals and society, and to enable participation in economic life*. However, definitions of financial literacy vary over time and according to the nature of studies undertaken. Financial literacy as a concept is more than just financial knowledge. It also refers to utilizing acquired knowledge in conjunction with the financial knowledge and have the ability and confidence to make healthier financial decisions (Huston, 2010). Moreover, Atkinson and Messy (2012) ‘Measuring Financial Literacy: Results of the OECD INFE Pilot Study’, a pilot study which was undertaken in 14 countries define financial literacy as a variation across financial knowledge, financial behaviour and attitude. They state that a financially

literate person will have some basic knowledge of key financial concepts. The way in which a person behaves will have a significant impact on their financial wellbeing and attitude of a person determines their savings behaviour and priority of financial plans for short or long term.

Over the past century, the subject of financial literacy and measuring the literacy rate in countries around the world has been an area of interest and thorough discussions. To implement a successful national strategy for financial education, assessment of financial literacy in the population is a key component which will enable the policy makers to identify gaps and therefore design appropriate programmes. This assessment of financial literacy can also be useful to make international comparisons which will allow different countries to benchmark themselves with other countries. Where similar patterns are identified across countries, national authorities can work together to find common methods for improving financial literacy within their respective populations (OECD, 2013a). To this effect OECD-INFE has developed an extensive toolkit specifically to measure financial literacy and financial inclusion. However, where financial literacy has been studied in conjunction with retirement planning, a standardized instrument to measure both simultaneously does not exist yet. Nonetheless, Lusardi and Mitchell (2005) designed an experimental financial literacy module on planning and financial literacy for the 2004 Health and Retirement Study (HRS) to study household savings behaviour in the U.S. The module include questions around two basic concepts seen as necessary for informed retirement planning and saving decisions: interest rates and inflation. To date, these key financial literacy questions have become a global standard in measuring financial literacy and have been used worldwide by several authors for in-country financial literacy surveys. The questions are as follows.

- 1. Understanding of interest rate (Numeracy): Suppose you had \$100 in a savings account and the interest rate was 2% per year. After 5 years, how much do you think you would have in the account if you left the money to grow?*
- 2. Understanding of Inflation: Imagine that the interest rate on your savings account was 1% per year and inflation was 2% per year. After 1 year, how much would you be able to buy with the money in this account?*

OECD International Network on Financial Education (INFE) has also developed an extensive core questionnaire that includes a series of questions divided in eight categories to test the levels of financial knowledge (includes the above two questions as well but wordings slightly differ). The questions have been chosen by OECD INFE to cover a range of financial topics (time value of money, interest paid on loan, calculation of interest plus principle, compound interest, risk and return, inflation and diversification) and to vary in difficulty to some extent (OECD-INFE, 2011). *The current study uses the above two questions and a third question from OECD INFE core questionnaire on time value of money to assess the level of financial literacy in the Fiji Islands.*

2.2 Retirement Planning

One simplest and direct way to examine whether individuals look ahead and make plans for the future is to study the extent of retirement planning (Lusardi, 2009). Retirement planning is an important determinant to individual and household wealth. Why do people fail to plan when planning can make such difference such as in wealth accumulation? The greater part of the answer to this question lies in the extent of poor financial understanding. Prior studies have shown that low levels of financial literacy have resulted in detrimental financial behaviours. Over the years, amidst catastrophic financial crisis and its effect on the global economies, individuals have had to become increasingly responsible for their own financial security following retirement (Lusardi, 2008). Accumulating wealth for retirement can be boosted through early planning and savings. Yet, as concluded in many studies, many people give little or no thought about their post-employment years. For instance, from a study conducted in the United States on financial literacy and retirement planning in 2011, only about 43% of the respondents stated that they had tried to figure out how much they would need to save for retirement (Lusardi and Mitchell, 2011a). Moreover, many people fail to plan for retirement adequately even when this crucial phase of life is only 5-10 years off.

The relationship between financial literacy and retirement planning is extremely important since the shift to greater individual responsibility for financial well-being and retirement preparation is now prevalent. Several studies around the world have confirmed that financial literacy is positively and significantly related to retirement

planning. For instance, Lusardi and Mitchell (2011c) conducted the National Financial Capability Survey in the United States and concluded that their results painted a troubling picture of the current state of financial knowledge in the US. They stated that many respondents lack key knowledge of financial concepts and fail to plan for retirement. Overall, they conclude that financial literacy does drive retirement planning. Similar studies in Japan (Sekita, 2011), the Netherlands (Rooij, Lusardi, and Alessie, 2011) and Russia (Klapper and Panos, 2011) find that not only financial literacy increases the probability of having a savings plan but it is significantly and positively related to retirement planning. The Swedish case (Almenberg and Save-Soderberg, 2011) also presents similar results but the authors do not find a strong link between the two subject as in other countries.

These country reports confirm that financial literacy is indeed associated with retirement planning and that it should not be taken for granted. Given the complexity of day-to-day financial dealings, the evidence of illiteracy raises important questions for policy formulations.

3. Empirical Research

The objective of this present study is to analyse financial literacy effects on retirement planning among the Fijian population. Besides financial literacy being an important factor predicting retirement planning, several socio-demographic variables are also analysed to check if they affect retirement planning as well. This section presents the rationale for descriptive analysis and hypotheses for this study followed by the description of data set and sample characteristics. The results of the analysis are presented in sections 4 and 5.

3.1 Rationale for Descriptive Analysis and Hypothesis Development

Based on relevant literatures, the analysis of this study will focus on two major dimensions: the rationale for descriptive analysis and hypotheses testing. Table A below presents the two dimensions.

Table A: *Overview of rationale for descriptive analysis and hypotheses*

<i>Rationale for descriptive analysis</i>	<i>1. Financial literacy amongst the Fijian population is low. 2. There is a significant association between demographic factors* and financial literacy. 3. The Fijian population is not planning well for retirement.</i>
<i>Hypotheses</i>	
H1:	<i>There exists a relationship between financial literacy and retirement planning.</i>
H2:	<i>There is a significant association between demographic factors** and retirement planning.</i>

** and ** Demographic factors = Age, Gender, Region, Marital status, Education, Employment status, Income, Homeownership, Received Financial education, Savings account, Number of children, and Sibling situation.*

3.2 Dataset and Sample Characteristics

To study the relationship between financial literacy and retirement planning in the Fiji Islands, a survey was commissioned across the Fijian population (all divisions⁴) of 1,100 individuals, who were carefully selected to represent the national sample by age,

⁴ Refers to Northern, Southern, Central, Eastern and Western divisions.

gender, ethnicity (since Fiji has 2 major ethnic groups) and region (urban, which is mostly dominated by formal employment sector and rural, dominated by agricultural sector). The survey was conducted via two methods: online questionnaire⁵ through Google Form for respondents from the urban region and hardcopies of the questionnaires distributed to the respondents from the rural region. The questionnaires distributed in the rural regions were translated in the Fijian language⁶ for the iTaukei ethnic group and the English versions were used for the Indo-Fijian group. Difficulties with getting the rural region respondents to answer the survey online due to limited or no internet connectivity, the survey questionnaires had to be distributed to them in order to achieve maximum feedback. 650 respondents were selected from the urban region and 450 from rural. A total of 754 respondents completed the questionnaire, a response rate of 73.6%, from which 5% were screened out due to incomplete or irrelevant data. The specific urban-rural response rates were 78.3% and 66.7% respectively. Due to the regional based data collection and different data collecting methods employed for the two regions, most parts of the data analysis are presented separately according to the regions.

Detailed summary statistics of sample characteristics is provided in Appendix 2 Table 1A. But for an overview, the average age of the sample is 34 years, 58.1% are male respondents. 19.8% of the sample has less than secondary school education (Fiji School Leaving Certificate), while 41.9% attained a bachelor's degree or above. The prime age group (25-65) account for 85.3% while 60% of the sample respondents are from the urban region. In addition, 56.2% are married respondents and about 66% of the sample is employed. Survey respondents were also asked to indicate their monthly income bracket. 84.6% of urban respondents indicated that they earn more than ⁷\$500 while 51.5% of rural region respondents earn \$500 or less per month. As per Fiji Bureau of Statistics - Key Statistics: June 2012 on 2008-09 Household Income and Expenditure, household income per adult in rural and urban regions are \$2,895 and \$5,879 respectively per annum (FBOS, 2012). This indicates that, on average, our sample respondents earn more than household income per adult in both regions as reported by

⁵ A sample questionnaire is attached in Appendix 1 for reference. The rationale behind each question is also presented based on relevant literature and dimensions on the current study.

⁶ Sample translated Fijian version of the questionnaire is attached in Appendix 1 for reference.

⁷ '\$' represents the Fiji Dollars (FJD).

Fiji Bureau of Statistics. A critical factor leading to this result is maybe the establishment of Fiji's first ever National Minimum Wage rate (\$2 per hour or at least \$90 per week) that was announced by the government in January 2014 (Ministry of Information and National Archives of Fiji, 2014).

Additionally, the descriptions of the set of variables used for this research paper are attached in Appendix 2, Table A2.

4. Financial Literacy

4.1 Descriptive analysis of financial literacy among the Fijian sample

How financially literate are individuals in the Fiji Islands?

To measure financial literacy, the current study included three specific questions in the survey covering fundamental concepts of economics and finance, expressed as they would be used in normal everyday transactions such as interest rates, inflation and time value of money. These questions have been used in previous studies around the world, for instance: (a) understanding of interest rates (numeracy skills), for example Lusardi and Mitchell (2011a), Sekita (2011); (b) understanding of inflation, for example Rooij *et al.* (2011), Lusardi and Mitchell (2011a); and (c) understanding time value of money, for example, Atkinson and Messy (2012) in OECD INFE Pilot Study.

The exact questions from the Fiji Islands survey are as follows:

1. *Understanding of interest rates (Numeracy):* Suppose you had \$100 in a savings account and the interest rate was 2% per year. After 5 years, how much do you think you would have in the account if you left the money to grow?
 - (i) More than \$102
 - (ii) Exactly \$102
 - (iii) Less than \$102
 - (iv) Don't know
 - (v) Refuse to answer
2. *Understanding of Inflation:* Imagine that the interest rate on your savings account was 1% per year and inflation was 2% per year. After 1 year, how much would you be able to buy with the money in this account?
 - (i) More than today
 - (ii) Exactly the same
 - (iii) Less than today
 - (iv) Don't know
 - (v) Refuse to answer
3. *Understanding time value of money:* To assess this category, a new set of questions were developed for the Fiji Islands survey which was divided into two parts. These questions were devised based on the results from The Financial Competency of Low-

Income Households in Fiji, 2012 report. According to the report, the ownership of other forms of long term savings such as investment in Unit Trusts and/or stocks/shares market and Term Deposits were the lowest (urban: 0% in trust/shares and 5% in term deposits; rural: 2% in trust/shares 3% in term deposits) from a representative sample of 400 respondents (Sibley, 2012). This confirms that the Fijian population are not much or not at all aware of their options to invest in stock markets for long term savings and therefore display lack of knowledge on time value of money regardless of a stock exchange being present in the Fiji Islands, The South Pacific Stock Exchange (SPSE). The first question in this category asks the respondent if they have any knowledge about investment or capital markets focussed on SPSE and CMDA (Capital Markets Development Authority). The follow on question asked respondents on investment in securities compounded annually to assess time value of money concept. The question specifically on securities is based on the Vision statement of SPSE which reads “To be the preferred securities exchange in the South Pacific”. Thus, if the respondents are aware of SPSE’s role in the Fijian economy, than the question on time value of money for investing in securities would not sound too complex. The two questions that were asked in the survey are as follows:

- Do you have any knowledge about investment or capital markets such as South Pacific Stock Exchange (SPSE) or Capital Markets Development Authority (CMDA)?
 - (i) Yes, I am well informed and often engage in investments
 - (ii) Well informed
 - (iii) Somewhat informed
 - (iv) Not informed at all
 - (v) Don’t know
- Suppose you invest \$2,000 in securities which pay 10% compounded annually. How many years do you think will it take for your investment to double to \$4000?
 - (i) Between 0 - 5 years
 - (ii) Between 5 – 10 years
 - (iii) Between 10 – 15 years
 - (iv) Don’t know
 - (v) Refuse to answer

The first two questions (interest rate and inflation) points out if the respondents have knowledge of basic finance and economic concepts most primarily related to saving. The third question(s) evaluates knowledge on time value of money in relation to an investment decision.

The results for responses to the financial literacy questions are described below in the ***Findings*** section. An important thing to note when interpreting Table 1, 2 and 3 is that the responses are divided according to the regions, urban and rural. As mentioned earlier, the survey was accomplished via two methods: online for urban and hardcopy distribution for the rural region respondents. To be fair with the analysis, taking into consideration that the financial literacy questions involved basic calculations and since the urban respondents answered the survey online, there exists a possibility of using the web or other electronic gadgets to derive the appropriate answer whereas the rural respondents were not privileged as such apart from using a simple mathematical calculator or a mobile phone application calculator, if used. On the other hand, results of the whole sample is also presented given the justification that, to be able to answer the survey online (being an urban respondent) is the result of being literate enough to use some source (web, electronic devices, etc..) to arrive at an appropriate answer compared to the limited sources at the rural respondents disposal.

Findings

Rationale 1: Financial literacy amongst the Fijian population is low.

Respondents' answers to the three financial literacy questions are summarised in Table 1, Table 2, Table 3 and the overall performance across the three questions are presented in Table 4. The results are computed, subdivided and presented according to urban and rural regions. Moreover, for the purpose of international comparison of financial literacy, the results are obtained and presented both from the 'whole sample' (all observations) and observations from respondents aged 25-65 as this age is considered to be the prime age group.

Interest Rate question

As shown in Table 1: Panel A, 83.1% of respondents from the urban region (82.3% of those aged 25-65) responded correctly (More than \$102) to this question while 6.8% gave incorrect responses and 2.6% responded as 'Don't know'. On the other hand, 63.2% of the respondents from the rural region responded correctly to this question of which 62.8% are aged 25-65. An alarming 18.1% (of which 19.4% are aged 25-65) responded 'Don't know'. Looking at the sample as a whole (Panel B), 75.2% respondents could correctly answer this question of which 74.5% are aged 25-65. 16.8% of the whole sample either did not answer the question correctly or responded as 'Don't know' while 8.1% of them refused to answer. Considering the simplicity of the interest rate question and that the respondent could have selected the correct answer without merely making any calculations, the result to this question is a bit startling. In 2012 survey on The Financial Competency of Low-Income Households in Fiji, respondents were assessed on their knowledge of cost of money, interest paid or received and costs associated with their financial products (Sibley, 2012). Sibley reports that approximately 78% and 82% of urban and rural respondents respectively did not know the interest received on their savings over the past year but they are rather aware that the principle amount will be larger when interest is added to the initial amount. This difference is clearly revealed by the respondents in the current study where 83.1% of urban and 63.2% of rural respondents know that a \$100 in their savings account receiving an interest of 2% will accumulate to more than \$102 after 5 years. When quantifying interest received over the past year and predicting the growth of \$100 at 2% interest rate over 5 years, the latter sounds much effortless to compute. In terms of international comparison, rates of correct responses here were similar to Germany (82.4%), Australia (83.1%), and the Netherlands (84.8%).

Table 1: Interest Rate Question

Suppose you had \$100 in a savings account and the interest rate was 2% per year. After 5 years, how much do you think you would have in the account if you left the money to grow?

Panel A: Urban vs. Rural

	Urban Sample	Age 25-65	Rural Sample	Age 25-65
More than \$102	83.1%	82.3%	63.2%	62.8%
Exactly \$102	3.7%	4.4%	6.4%	5.8%
Refuse to answer	7.5%	7.8%	9.0%	9.7%
Less than \$102	3.1%	3.4%	3.3%	2.3%
Don't know	2.6%	2.1%	18.1%	19.4%
<i>Number of observations</i>	455	385	299	258

Panel B: Whole Sample

	Whole Sample	Age 25-65
More than \$102	75.2%	74.5%
Exactly \$102	4.8%	5.0%
Refuse to answer	8.1%	8.6%
Less than \$102	3.2%	3.0%
Don't know	8.8%	9.0%
<i>Number of observations</i>	754	643

Inflation question

As shown in Table 2: Panel C, only 60.2% of urban respondents (60.0% of those aged 25-65) were able to figure out that the purchasing power of their savings will decrease because of inflation. Compared to the rural region, the percentage of correct responses given by the urban respondents is 157% higher. The proportion of respondents, who answered “Don’t know” from the rural region (31.8%), is more than twice the proportion of the urban region. Looking at the sample as a whole, Panel D, 45.6% of the respondents were able to answer this question accurately. The proportion of respondents who answered the question inaccurately is about 25%, almost half the proportion of respondents who were able to identify the correct answer. Percentages for the subsample of respondents age 25-65 are roughly similar. To answer the inflation question correctly, individuals need to have some basic understanding of the effects on purchasing power during inflationary periods. Jayaraman, Bhatt, and Chen (2013), did an empirical study on the threshold inflation rate in Fiji over a 39 year period (1970-2008) and concluded based on the past trends in growth and inflation that the threshold level is 3.6 percent. The authors also concluded that as long as the inflation level for Fiji is below the 3.6% threshold level, growth would be positive. The Fijian economy has

had its highs and lows and inflation has reached an all time high of 10.50% in 2010 and a record low of -0.30% in 2009 (*see Appendix 2 Figure 1*). However, since Fiji is prone to natural disasters (flooding being the most common) and heavily dependent on the importation of fuel and oil products, the often destroyed agricultural commodities and the increases in the international oil prices lead to general rise in the price level in Fiji. Since 2013 the inflation rate in Fiji has been below the threshold level. This may be the reason as to why the other 54.4% of the sample could not correctly answer the question on inflation because the purchasing power over the past year has been stable. In terms of international comparison, rates of correct responses here were similar to the Russian case (50.8%), and below 8-10 percentage points of Japan (58.8%) and Sweden (59.5%).

Table 2: Inflation Question

Imagine that the interest rate on your savings account was 1% per year and inflation was 2% per year. After 1 year, how much would you be able to buy with the money in this account?

Panel C: Urban vs. Rural

	Urban Sample	Age 25-65	Rural Sample	Age 25-65
More than today	11.6%	11.95%	20.4%	19.8%
Exactly the same	5.9%	5.45%	15.4%	16.7%
Refuse to answer	7.5%	7.79%	9.0%	9.7%
Less than today	60.2%	60.00%	23.4%	22.1%
Don't know	14.7%	14.81%	31.8%	31.8%
<i>Number of observations</i>	455	385	299	258

Panel D: Whole Sample

	Whole Sample	Age 25-65
More than today	15.1%	15.1%
Exactly the same	9.7%	10.0%
Refuse to answer	8.1%	8.6%
Less than today	45.6%	44.8%
Don't know	21.5%	21.6%
<i>Number of observations</i>	754	643

Time Value of Money question

The proportion of correct answers to the time value of money question decreases considerably, almost 50% lower than the interest rate question, when we increase the difficulty level such as including the word ‘securities’ and testing for compound interests. Panel E shows results across the two questions. As per the results, only 34.7% (33.8% of those aged 25-65) of the respondents from the urban region claim that they

are informed about SPSE and/or CMDA and also managed to respond correctly to the second question. On the other hand, the rural respondents display very low levels of knowledge and accuracy to the questions, 9.7%. There were also respondents from both regions (28.4% from urban and 20.4% from rural) who claimed that they were informed about SPSE and/or CMDA but provided either an incorrect or ‘don’t know’ response to question 2. 50.2% of rural respondents do not know about these institutions at all and answered ‘don’t know’ to question 2 compared to 15.8% of the urban respondents. Looking at the sample as a whole, Panel F, only 24.8% (24.1% of those aged 25-65) of the respondents are informed about these institutions and answered question 2 accurately whereas 29.4% had no idea about the answers to both questions. Moreover, an answer option provided to the respondents in the first question (knowledge of SPSE and/or CMDA) was “*Yes, I am well informed and often engage in investments*”. Of the whole sample, only 2%⁸ of the respondents claimed that they are well informed about SPSE and/or and often engage in investments.

Analysing question 2 as a standalone, Panel G, only 20.4% of rural respondents managed to answer this question correctly, which is less than twice the proportion of urban respondents. 36.8% of the rural respondents did not know the answer to the question while 39.1% of urban respondents answered the question incorrectly. Considering the sample as a whole, 37.3% of the respondents provided correct answers while 37% answered incorrectly and 8.1% refused to answer. Even with the prime age group (25-65), close to three fifth (54.1%) could not provide an answer or answered the question wrongly. To answer the time value of money question correctly, individuals need to possess either some basic economic or financial education or have some hands on experience with investment strategies. Also, concepts such as ‘securities’, mutual funds’ and ‘stocks’ are not part of Fiji’s high school syllabus. Nonetheless, the South Pacific Stock Exchange in Fiji is very much committed in advocating for investor education. According to SPSE’s 2013 Annual Report, financial literacy remains one of their key pillars of wealth creation and commits itself to disseminate relevant skills and knowledge to help individuals make informed and effective decisions with the financial resources at their disposal. In July 2013, SPSE launched ‘Smart Investing Sessions’ initiative in collaboration with licensed investment advisers and stockbrokers to deliver

⁸ Refer to footnotes 9 and 10 for details.

advanced level seminars. Also, the institution conducts lunch hour seminars around the city and other parts of Fiji and often uses an automated trading platform to educate their audience. In addition, presentations at the higher secondary school and university level, radio commercials, advertisements, articles and press releases all form part of SPSE's investor education campaign.

Table 3: Time Value of Money question

(1) Do you have any knowledge about investment or capital markets such as SPSE or CMDA? And, (2)* Suppose you invest \$2,000 in securities which pay 10% compounded annually. How many years do you think will it take for your investment to double to \$4,000?

Panel E: Urban vs. Rural (answers across the two questions)

	Urban Sample	Age 25-65	Rural Sample	Age 25-65
Informed and correct	34.7%	33.8%	9.7%	9.7%
Not informed but correct	13.6%	14.3%	10.7%	11.6%
Informed but incorrect or Don't know	28.4%	29.4%	20.4%	18.2%
Don't know for both	15.8%	14.8%	50.2%	50.8%
Refuse to answer	7.5%	7.8%	9.0%	9.7%
Number of observations	455	385	299	258

Panel F: Whole Sample (answers across the two question)

	Whole Sample	Age 25-65
Informed and correct	24.8% ⁹	24.1%
Not informed but correct	12.5%	13.2%
Informed but incorrect or Don't know	25.2% ¹⁰	24.9%
Don't know for both	29.4%	29.2%
Refuse to answer	8.1%	8.6%
Number of observations	754	643

Panel G: Urban vs. Rural *(question 2 only)

	Urban Sample	Age 25-65	Rural Sample	Age 25-65
Between 0 - 5 years	12.3%	13.5%	15.7%	15.9%
Between 5 - 10 years	48.4%	48.1%	20.4%	21.3%
Refuse to answer	7.5%	7.8%	9.0%	9.7%
Between 10 - 15 years	26.8%	26.2%	18.1%	14.7%
Don't know	5.1%	4.4%	36.8%	38.4%
Number of observations	455	385	299	258

⁹ Includes 1.3% of respondents who engage in investments.

¹⁰ Includes 0.5% of respondents who engage in investments.

Panel H: Whole Sample *(question 2 only)

	Whole Sample	Age 25-65
Between 0 - 5 years	13.7%	14.5%
Between 5 - 10 years	37.3%	37.3%
Refuse to answer	8.1%	8.6%
Between 10 - 15 years	23.3%	21.6%
Don't know	17.6%	18.0%
Number of observations	754	643

Answers across all 3 financial literacy questions

The overall performance of respondents, based on rural-urban regions and the sample as a whole, is summarised in Table 4 below. Referring to Panel J, in aggregate, only 41.9% (41.2% of those aged 25-65) of respondents correctly answered the interest and inflation question. To no surprise this percentage of correct responses falls to 24.3% (Panel J) when time value of money question is integrated. Amongst the prime age group, 25-65, only 23.8% of those were able to identify correct answers to all questions. This is a very low figure. Moreover, close to 28% of both samples (whole sample and age 25-65) indicated that they 'don't know' at least once; and 7.3% (of those 1.5% from urban and 16.1% from rural region) answered 'Don't know' to all questions. This is crucial because those who know the least have high incidence of giving such responses. In addition, approximately 12% (of those 4.2% from urban and 22.7% from rural region) could not provide a correct answer to any of the questions.

Table 4: Answers across questions

Panel I: Urban vs. Rural

	Urban Sample	Age 25-65	Rural Sample	Age 25-65
Interest and Inflation correct	56.3%	55.6%	20.1%	19.8%
All correct	33.0%	31.9%	11.0%	11.6%
None correct	4.2%	3.1%	22.7%	22.5%
Atleast 1 'Don't know'	16.9%	16.4%	44.5%	46.1%
All 'Don't know'	1.5%	1.3%	16.1%	17.1%
Number of observations	455	385	299	258

Panel J: Whole Sample

	Whole Sample	Age 25-65
Interest and Inflation correct	41.9%	41.2%
All correct	24.3%	23.8%
None correct	11.5%	10.9%
Atleast 1 'Don't know'	27.9%	28.3%
All 'Don't know'	7.3%	7.6%
Number of observations	754	643

Overall, the level of financial literacy in the Fiji Islands is not high. Though it is notable that majority of the respondents were able to answer the interest rate question correctly (75.2%), almost half the sample were not able to answer the inflation question (45.6%). Approximately, only 37.3% were able to correctly answer the time value of money question, which is less than twice the proportion of interest question. Results across questions are also not inspiring since only 41.9% of the total respondents managed to get the interest and inflation question correct and this percentage falls down considerably to 24.3% when the time value of money question is added. Also, 11.5% of the respondents were not able to get any question correct.

A vast difference between the urban and rural region can be remarkably noted across the three financial literacy questions as well. Table 4, Panel I, shows that urban residents are more likely to respond correctly to the questions as compared to the rural residents. Specifically, where the urban residents' accuracy rate to each question were 83.1% (interest), 60.2% (inflation) and 48.4% (time value of money), the rural residents' scored 63.2%, 23.4% and 20.4% respectively. Also, the urban respondents are significantly less likely to reply 'Don't know' or incorrectly to all the questions compared to the rural respondents. This aligns with the results of The Financial Competency of Low-Income Households in Fiji report in which the author finds out that the urban households show evidence of higher levels of financial competency than the rural households (Sibley, 2012). As an international comparison, a similar study in Russia also found these related differences between urban and rural regions (Klapper and Panos, 2011).

4.2 Who is financially illiterate?

Rationale 2: There is a significant association between demographic factors and financial literacy.

In this section the overall performance on the three financial literacy questions is analysed as well as how performance varies across different demographic factors (age, gender, education, employment status and ethnicity) as reported in Table 5.

Age: Financial literacy follows a declining profile with age for overall performance on the three questions as well as for each question separately. Respondents below the age of 35 perform better than the other age groups. The worst performing age group are those who are older than 65 years except that they perform better than on the interest rate question compared to age group of between 51-65 years old.

Gender: Women perform a little worse than man on the overall. 25.3% of men were able to answer all three questions correctly compared to 22.8% of women; difference in performance between both groups is not insignificant. However, female respondents were able to perform better than the male respondents in the interest rate and inflation question while the male sample dominated the time value of money question. Both the gender groups approximately answered equal percentages of ‘don’t know’ to at least one financial literacy question. In addition, both groups perform extremely well in the interest rate question while the overall performance from both groups is worrisome.

Education: Financial literacy increases strongly and significantly with the level of education. Amongst the respondents who lack high school education only 9.4% of them answered all three questions correctly compared to 39.5% of those who are university graduates. Similarly, over half of the respondents (53.7%) who lack high school education responded ‘don’t know’ to at least one question, compared to 14.6% of those who are university graduates. Trend with education shows that as education level increases, the percentage of correct responses also increases accordingly. Similar to the age category, the interest rate question received highest percentages of correct answers from respondents with different levels of education.

Employment status: Financial literacy also varies with the employment status. The lowest levels of financial literacy are found among those who are not employed, 11.1%. Those in the active labor force had the highest correct response rate (28.4%) to all three questions. On the other hand, respondents who demonstrate the most difficulty answering the questions are those who are either not employed or actively seeking work.

Ethnicity: The Indo-Fijian group reported better results than the iTaukei group. 29.6% of the Indo-Fijian respondents were able to identify correct responses to the three

questions compared to 15.8% of iTaukei respondents. On the other hand, 37.5% of iTaukei respondents stated ‘don’t know’ to at least 1 question as compared to 22.1% of Indo-Fijian respondents.

Table 5: *Distribution of responses to Financial Literacy questions by Age, Gender, Education, Employment Status and Ethnicity*

Employment Status and Ethnicity									
	Interest (%)		Inflation (%)		Time value of Money (%)		Overall (%)		
	Correct	DK	Correct	DK	Correct	DK	³ Correct	^{>=} 1 DK	n
Age									
<= 35	80.2	5.6	51.3	18.6	41.2	13.2	26.6	24.3	515
36 - 50	70.5	10.8	36.9	21.6	31.8	21.0	20.5	30.7	176
51 - 65	46.6	31.0	25.9	43.1	22.4	44.8	17.2	48.2	58
> 65	60.0	0.0	0.0	60.0	0.0	40.0	0.0	60.0	5
Gender									
Male	72.1	10.5	44.7	23.1	38.6	18.5	25.3	28.3	438
Female	79.4	6.3	46.8	19.3	35.4	16.5	22.8	27.2	316
Education									
Less than High School	56.4	26.2	16.1	40.3	16.1	49.7	9.4	53.7	149
High School graduate	68.8	9.8	31.3	22.3	27.7	24.1	14.3	33.0	112
Some College (Cert. or Dip.)	78.5	5.6	45.8	20.3	38.4	9.6	17.5	26.0	177
University graduate (Bachelor)	84.3	2.7	64.3	12.8	49.7	4.9	39.5	14.6	185
Post-graduate	84.7	0.8	64.9	13.7	50.4	4.6	37.4	15.3	131
Employment status									
Self-employed	63.0	21.4	24.0	32.5	22.7	38.3	14.3	44.2	154
Non-employed	66.7	11.1	33.3	11.1	22.2	22.2	11.1	22.2	9
Not in labor force*	76.1	11.9	32.8	31.3	32.8	31.3	19.4	40.2	67
Workers**	80.5	3.6	55.5	15.9	43.5	8.0	28.4	20.1	497
Retired	48.1	22.2	22.2	40.7	22.2	40.7	22.2	48.1	27
Ethnicity									
Indo-Fijian	79.4	3.8	54.1	16.8	42.9	12.5	29.6	22.1	399
iTaukei	69.1	16.8	34.0	28.1	28.8	28.4	15.8	37.5	285
Observations	754								

Note: * The *Not in labor force* category includes individuals that are not in the labor force because they are students, homemakers, unable to work due to disability or for some other reason. ** The *Workers* category includes part-time and full-time workers. *DK* indicates respondent ‘Don’t know’.

4.3 Self-assessed versus actual financial literacy

To complement the questions measuring actual financial literacy, a question in the survey asked respondents about how they assess their own financial knowledge. This is critical to identify any mismatch between perceived and actual knowledge. The question that was asked is:

On a scale from 1 to 5, where 1 means very low and 5 means very high, how would you assess your understanding of basic financial skills?

Although majority of the respondents fare poorly in their responses to the three financial literacy questions, the results in Table 6 indicate that respondents believe they do rather well. Around one thirds (34%) of respondents award themselves the top knowledge scores (4 - 5) while around 22% of them give themselves failing marks (1 – 2). Almost 78% of the respondents believe that they are at or above median with regards to their financial knowledge, a figure greatly that exceeds what is revealed from the review of actual knowledge discussed in Table 4.

The subgroups which are aware of their lack of financial knowledge can be determined by comparing Table 5 and 6. The older population seem to be aware of their lack of financial knowledge and give themselves relatively low scores but the opposite is not true among the young groups who rate themselves with relatively high scores but actual knowledge is lower than perceived. The gender groups rate themselves almost equally in self assessed knowledge but actual knowledge as reported in Table 5 is around 10 percentage points lower than perceived. The least educated are aware that they are uninformed of basic financial knowledge and so score themselves conservatively towards the lower end of the scale. However, those with higher levels of education assess themselves relatively high as compared to the actual knowledge. Across the ethnic groups, around 41% of the Indo-Fijian respondents rate themselves above median score whereas their actual knowledge as per Table 5 is around 12% lower. Similar trend follows with the iTaukei group who assess themselves higher but lower than the Indo-Fijian group, but the actual knowledge has a mismatch.

Table 6: *Distribution of responses to Self-reported Financial Literacy questions by Age, Gender, Education, Employment Status and Ethnicity*

	<i>1 - 2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>n</i>	<i>Average score</i>
Full sample	22.4	43.8	22.7	11.1	754	3.2
Age						
25 - 65	22.6	43.1	22.7	11.7	643	3.2
<= 35	16.1	46.4	25.2	12.2	515	3.3
36 - 50	28.4	43.8	17.6	10.2	176	3.0
51 - 65	55.2	24.1	15.5	5.2	58	2.3
> 65	80.0	0.0	20.0	0.0	5	2.2
Gender						
Male	23.0	42.7	21.7	12.6	438	3.2
Female	21.5	45.3	24.1	9.2	316	3.1
Education						
Less than High School	65.1	32.9	0.7	1.3	149	2.2
High School graduate	26.8	54.5	14.3	4.5	112	2.9
Some college (Cert. or Dip.)	10.7	53.1	23.7	12.4	177	3.3
University graduate (Bachelor)	9.7	42.7	36.2	11.4	185	3.5
Post-graduate	3.8	35.9	34.4	26.0	131	3.8
Employment status						
Self-employed	45.4	45.5	5.2	3.9	154	2.6
Non-employed	66.7	33.3	0.00	0.00	9	1.9
Not in the labor force*	32.8	38.8	19.4	9.0	67	2.9
Workers**	11.3	44.9	29.4	14.5	497	3.4
Retired	55.6	29.6	14.8	0.00	27	2.3
Ethnicity						
Indo-Fijian	17.8	41.1	28.1	13.0	399	3.3
iTaukei	32.6	46.3	14.4	6.7	285	2.9
Observations	754					

Note: * The *Not in labor force* category includes individuals that are not in the labor force because they are students, homemakers, unable to work due to disability or for some other reason. ** The *Workers* category includes part-time and full-time workers.

5. Retirement Panning

5.1 Descriptive analysis of FNPF across demographic characteristics

As discussed in an earlier section that Fiji National Provident Fund (FNPF) is Fiji's social security regulator which provides its members with provident fund programs for a successful retirement. It is therefore mandated by law that all employers and its employees be a part of the fund through regular contributions from both ends. To get a deep insight from the sample, respondents were asked seven questions in the survey related to FNPF.

The first question asked the respondent if he/she is a member of FNPF followed by the question on percentage of a person's earnings that is deducted towards their provident fund. The third question focused on the retirement age in Fiji. The fourth and fifth questions asked them about voluntary contributions (VC), whether they are aware if individuals can make voluntary contributions and whether they make voluntary contributions to their funds. The sixth question focused on retirement pension options (PO) with the last one being on awareness of FNPF policies, updates and reforms.

Table 7 shows the distribution of responses across the demographic variables for questions regarding provident fund. 76.1% of the respondents are members of FNPF of which 80.7% are females. Only 48.2% from the rural region are members. Within the prime age group (25-65), 76% of them have membership. Only 16.8% of the respondents who stated having less than high school education are members while around 97% of the working respondents are active participants. Approximately 80% of the full sample stated the correct contribution rate of 8% from earnings deducted towards provident fund of which, to no surprise, only 22.2% of the non-employed respondents knew the rate. More than four fifths of the sample knows the retirement age in Fiji. This result on retirement age question was expected because when the retirement age was reduced to 55 years in Fiji in 2009, the issue sparked great controversy amongst the Fiji population and the government with massive media coverage revolving around this. On voluntary contributions questions, about 83% of the total respondents stated that they are aware that individuals can make voluntary contributions to their funds but only 12% of them claim that they are actually making voluntary contributions to their accounts. Even amongst the self-employed respondents, out of the 24% of them who

stated having provident fund accounts, only about 15% of them make voluntary contributions. Less than 50% of the full sample knows about their retirement pension options. This is worrisome indeed because the efficient functioning of the system depends on its participants being well-informed and having sufficient financial skills to decide on the best available option as and when pension becomes due. Overall, 85% of the respondents state that they are aware of FNPF's policies, updates and reforms.

Table 7: *Distribution of Provident Fund responses across demographic variables*

	<i>PF Member</i>	<i>Knows Rate (8%)</i>	<i>Knows Retirement Age</i>	<i>Knows about VC</i>	<i>Does VC</i>	<i>Knows of PO</i>	<i>Knows of PF Policies</i>
Full sample (%)	76.1	79.2	87.3	82.8	12.3	48.7	85.0
Gender							
Male	72.8	79.0	88.1	83.3	12.8	46.1	85.6
Female	80.7	79.4	86.1	82.0	11.7	52.2	84.2
Region (%)							
Urban	94.5	83.3	88.8	84.0	10.8	56.3	84.8
Rural	48.2	72.9	84.9	80.9	14.7	37.1	85.3
Age (%)							
< 25	78.3	67.0	88.7	68.9	12.3	46.2	72.7
25 - 65	76.0	81.3	87.1	85.1	12.4	49.0	87.1
> 65	40.0	60.0	80.0	80.0	0.0	60.0	80.0
Education (%)							
Less than High School	16.8	74.5	77.2	78.5	8.1	14.8	87.3
High School graduate	70.5	67.9	93.8	83.0	20.5	50.9	76.8
Some College (Cert. or Dip.)	96.0	78.0	89.3	79.7	9.0	52.5	84.2
University graduate (Bachelor)	93.0	87.0	89.2	84.9	9.2	61.1	86.5
Post-graduate	97.7	84.7	87.8	88.5	19.1	62.6	88.6
Employment status (%)							
Self-employed	24.0	82.5	81.2	89.0	14.9	20.1	88.3
Non-employed	55.6	22.2	66.7	55.6	0.0	33.3	66.7
Not in labor force*	49.3	55.2	83.6	65.7	13.4	29.9	64.2
Workers**	97.4	82.5	89.9	84.3	12.1	59.8	86.9
Retired	55.6	77.8	88.9	70.4	3.7	59.3	88.8
Observations	754						

Note: * The *Not in labor force* category includes individuals that are not in the labor force because they are students, homemakers, unable to work due to disability or for some other reason. ** The *Workers* category includes part-time and full-time workers.

Acronyms in Table headers: PF – Provident Fund; VC – Voluntary contributions; PO – Pension options.

5.2 Descriptive analysis of retirement planning among the Fijian sample

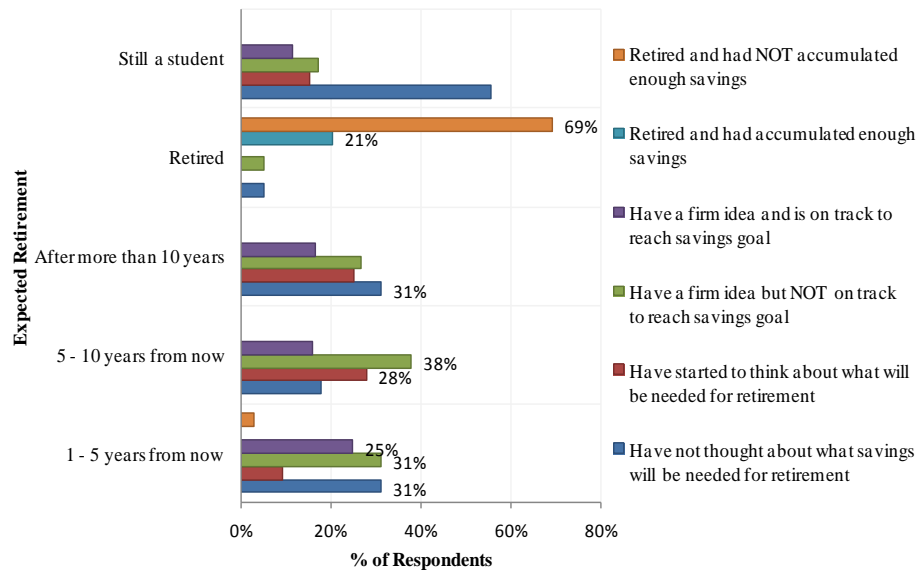
Rationale 3: The Fijian population are not planning well for retirement.

The respondents were asked three questions related to retirement. The first question was focused on the respondents expected retirement. The second question focused on the respondents thoughts about financial aspects of retirement. Finally, the third question asked respondents if they had planned or tried to figure out how much they needed to save for retirement. The exact wording of the questions can be found in the survey questionnaire (*questions 13, 14, 16*) attached in the Appendix 1.

Chart 1 below shows the results of first two questions. As it can be seen, approximately 31% of the respondents who indicated that they will retire in 1–5 years time from now ‘have not thought about what savings will be needed for retirement’ and about the same percentage of other respondents who will also retire between in 1-5 years time from now stated that they ‘have a firm idea but not on track to reach savings goal’. 31% is very soaring in relation to that retirement is just around the corner (between 1-5 years) and individuals have neither thought about it nor are on track to reach their savings goal. On the other hand, only 25% of the respondents stated that they ‘have a firm idea and is on track to reach savings goal.’ This is critical because it all sums down to indicate lack of retirement planning which ultimately explains the low levels of retirement wealth accumulation.

The prime age respondents, aged between 25-65 years, are those majorities who will retire 5-10 years from now or after more than 10 years from now. Respondents who indicated that they will retire between 5-10 years from now, 28% of them ‘have started to think about what will be needed for retirement’ while the majority, 38%, ‘have a firm idea but not on track to reach savings goal’. On the other hand, a not so impressive 31% of the respondents who will retire after more than 10 years stated that they ‘have not thought about what savings will be needed for retirement.’ This is a worrying figure as well because, though retiring after more than 10 years may seem too far from the retirement era, time waits for no man and thus wealth accumulation for retirement should be initiated from the early days after entering the workforce. A disheartening 69% of the retired sample indicated that they had NOT accumulated enough savings for their post-retirement while only 21% of them achieved their savings goal.

Chart 1
Expected Retirement and Thoughts about Retirement



Planning for Retirement

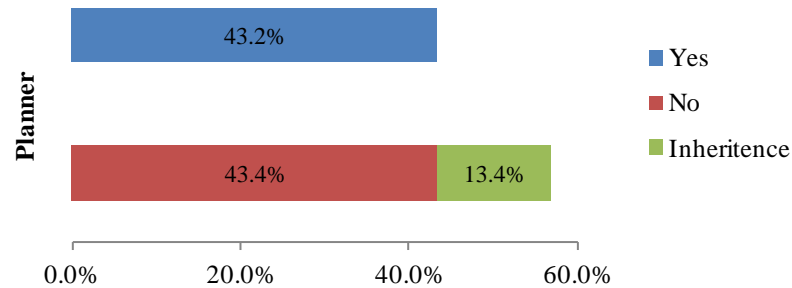
The third question of this section asks respondents if they had a plan (or planned if retired) or tried to figure out how much they needed to save for retirement. The following was posed to the respondents.

Did you plan (planned if retired) or tried to figure out how much you needed to save for retirement?

The respondents had three choice of answers: (i) *Yes*; (ii) *No*; and (iii) *I am expecting to receive (or received if retired) inheritance to financially rely upon during retirement*.

This is an important question in relation to planning for retirement because prior research has shown that planners accumulate more wealth for retirement than non-planners do. From the responses received to the above question in the survey, individuals are categorised into two groups: Planners and Non-planners, and the result is presented in Chart 2 below.

Chart 2
Planners vs. Non-Planners



As it can be seen in Chart 2, only 43.2% of the full sample indicated that they have planned or tried to figure a savings strategy for wealth accumulation in order to prepare for retirement. On the other hand, more than half the sample, 56.8%, stated that they don't have a plan in order to save for retirement. Of the 56.8% of non-planners, 13.4% of the respondents claim that they are expecting to receive or have received inheritance to financially rely upon during their retirement period. Table 8 below shows a detailed breakdown between planners and non-planners across different demographic factors.

According to the results from the table below, overall, the female group are a little above 1 percentage point better planners than the male sample. Results become more interesting when the performance of gender groups are analysed according to the regions. The female sample (34.7%) from the rural regions tends to be better planners than the male sample (28.7%) whereas both groups from the urban sample almost achieve planning parity. According to the report, *Financial Capability, Financial Competence and Wellbeing in Rural Fijian Households*, which was published in 2009, women save more than men and more women make the effort of planning how they spend their money and more often too set financial goals. They understand their family situation and financial needs better and are realistic about their ability to meet the needs (Sibley, 2009). Females being better planners from the rural regions contribute significantly to the overall 44% of female planners compared to 42.7% male planners.

The depressing part according to gender distribution of planners and non-planners is that more than half of the sample falls in the non-planners category. Moving on to the age distribution, the prime age sample group, 25 – 65, are also not better planners. Only 46% of those who are aged 25-55 have devised a plan to save for retirement. The 55-65

age group even report poor planning results. Just 19.4% of them state having a retirement plan. Important thing to note here is that, in Fiji the retirement age for civil servants is 55 years whereas in private firm it ranges up to 65. Both age groups in this case highly report of not having a retirement plan especially there is a huge concern amongst the latter group, 55-65, since they may have entered or will be entering the retirement stage soon.

As per the ethnic groups, the Indo-Fijians assert to be better planners than the iTaukei sample, 43.4% and 38.9% respectively. While non-planners also dominate the ethnic sample, a pervasive belief in Fiji is that when the household head is no longer working or approaches retirement, support from children, relatives or other acquaintances and/or inheritance of assets forms an integral element to rely upon during retirement. As far as education is concerned, results suggest that as education level enhances, planning for retirement improves. Education level and planning for retirement seems to correlate well.

Employment status also plays a crucial role when planning for retirement. A retirement plan closely depends on the amount of wealth one accumulates through savings while being employed. 52.1% of those who are employed from the sample state that they have a savings plan for retirement. This is expected because being employed means having better savings than those not in the labor force yet. Around 27% of those who are self-employed also indicated having a savings plan as well. Around 88% of the self-employed respondents are from the rural region and a majority of them earn an income of less than \$500 per month so keeping up with a savings plan may be proving a little complex for them taking into account other household expenses. Also, as mentioned earlier, relying on other means such as support from children, relatives or other acquaintances and/or inheritance of assets are common sources of post-retirement options that prevail in the rural regions of Fiji Islands.

Table 8: *Distribution of Planners and Non-Planners by Gender, Region, Age, Ethnicity, Education, Employment Status and Income*

	<i>Planners (%)</i>	<i>Non-Planners (%)</i>	<i>n</i>
<i>Gender</i>			
Male	42.7	57.3	438
Female	44.0	56.0	316
<i>Region</i>			
Urban	51.2	48.8	455
<i>Male</i>	52.3	47.7	260
<i>Female</i>	49.7	50.3	195
Rural	31.1	68.9	299
<i>Male</i>	28.7	71.3	178
<i>Female</i>	34.7	65.3	121
<i>Age</i>			
< 25	36.8	63.2	106
25 - 55	46.0	54.0	607
55 – 65	19.4	80.6	36
> 65	20.0	80.0	5
<i>Ethnicity</i>			
iTaukei	38.9	61.1	285
Indo-Fijian	43.4	56.6	399
<i>Education</i>			
Less than High School	14.8	85.2	149
High School graduate	42.9	57.1	112
Some College (Cert. or Dip.)	50.3	49.7	177
University graduate (Bachelor)	51.9	48.1	185
Post-graduate	54.2	45.8	131
<i>Employment Status</i>			
Self-employed	26.6	73.4	154
Non-employed	22.2	77.8	9
Not in labor force*	28.4	71.6	67
Workers**	52.1	47.9	497
Retired	18.5	81.5	27
<i>Observations</i>	754		

Note: * The *Not in labor force* category includes individuals that are not in the labor force because they are students, homemakers, unable to work due to disability or for some other reason. ** The *Workers* category includes part-time and full-time workers.

5.3 Planning vs. Unforeseen circumstances

Everyone aims for a long, stress-free retirement. A successful retirement doesn't happen by accident; it takes a lot of work to prepare for it. Retirement planning is a long journey that takes a lot of time and effort to prepare for. When one does a solemn retirement planning, he or she is actually planning not to return to work after the age of 65 at the most. Even after 65 if one wants to continue working, it should be because he or she wants to and not because they have to. Retirement planning means replacing the wages and salaries with other sources of income during retirement era. All in all, no matter how much time and thought is invested in retirement planning, unexpected incidents are bound to occur. At some point, things that are not planned for beforehand, occurs. In order to deal with these unexpected events, planning needs to be flexible. Therefore, the need to be financially positioned is critical in order to have acceptable options at our disposal during non-anticipatory occasions. Thus, retirement plans need to have a margin of safety because it's impossible to predict what the world would be like in the next ten, twenty or thirty years, or even after retirement.

Taking this into account, three questions were asked in this study's survey relating to unexpected events such as meeting of expenses of on a monthly basis, an unexpected need of \$1,000 and duration till which living can be sustained if income shock (main source of income lost) is faced. The exact wordings of the questions (12, 35 & 38) are attached in Appendix 1. From Table 9 below, 36.2% of our planners sample indicated that they do not face any difficulty in meeting their monthly expenses while 33.5% of them stated that it is somewhat difficult. In the case of an unexpected need of \$1,000 arose, 49.1% of the planners assured that they are certain to come with the full amount while around 30% of them stated that they probably could come up with \$1,000. 12% of planners indicated that they would probably not be able to come up with full \$1,000 while more than twice of non-planners as compared to planners feared the same. Losing the main source of income would be a nightmare of any individual. Hence, respondents were asked to indicate in the survey that if they lost their main source of income, for how long they would be able to sustain their living. 28.5% of the planners indicated that they could sustain for less than a month while a worrisome 43.5% of the non-planners indicated the same. Furthermore, only 29.4% of planners stated that they could sustain for more than 6 months compared to around 16% of the non-planners. These results

show that the planners sample is well positioned if they were to face unforeseen circumstances since they are better prepared. Furthermore, I find that planning is positively correlated and statistically significant with these variables. For instance from Table 9, planning has somewhat strong relationship with an unexpected need of \$1,000 (Pearson correlation = .323). This shows that as planning increases, individuals tend to be more cautious and better prepared to face an unforeseen need as such.

Table 9: *Planning vs. Meeting expenses, Unexpected need and Income shock*

	Planners	Non-planners	Correlation with Planning	
<i>Meeting expenses on a monthly basis</i>				
Not difficult at all	36.2%	19.4%	Pearson Correlation	.092*
Somewhat difficult	33.5%	46.3%	Sig.	0.012
Very difficult	5.8%	10.0%	N	754
Someone helps	24.5%	24.3%		
<i>Unexpected need of \$1,000 arose</i>				
I am certain I could	49.1%	22.0%	Pearson Correlation	.323**
I probably could	29.4%	22.7%	Sig.	0.000
I am certain I could not	4.6%	18.2%	N	754
I probably could not	12.0%	24.5%		
Don't know	4.9%	12.6%		
<i>Sustain living if respondent had Income shock</i>				
Less than 1 month	28.5%	43.5%	Pearson Correlation	.217**
1 - 3 months	21.2%	28.3%	Sig.	0.000
3 - 6 months	20.9%	12.6%	N	754
6 months or more	29.4%	15.7%		

* Correlation is significant at the 0.05 level. ** Correlation is significant at the 0.01 level.

5.4 Retirement Planning: Does financial literacy matter?

Testing Hypotheses 1: There exists a relationship between financial literacy and retirement planning.

The relationship of primary interest to this study is to investigate the association between financial literacy and retirement planning. Thus, exploring the relationship between the two is a matter of interest because lack of financial knowledge maybe the result of poor planning. A growing body of research has concluded that financial literacy infact relates to retirement planning, which leads to greater wealth

maximization (for example Ameriks et al. (2003); Behrman et al. (2010); Lusardi (2009); Lusardi and Mitchell (2011)).

Table 10 below reports the percentage of planners and non-planners who answered each financial literacy question correctly. The sample is restricted to non-retired respondents younger than age 66 to exclude those in the decumulation phase of the life cycle. I also omit those below 25 years of age to eliminate those in school or not yet working. The result confirms the relationship that, in fact, both are positively associated in this sample dataset. For instance, respondents who answered all three financial literacy questions correctly are much more likely to have tried to figure out how much they need to save for retirement. As it can be seen, planners are more successful at answering each question compared to the non-planners. The major difference found relates to the inflation question where 53.5% of planners answered the question correctly versus 37.8% of non-planners. Similar difference is found when interest rate and inflation question are combined. Close to half of the planners answered this two questions correctly compared to 34.7% of non-planners. Furthermore, non-planners seemed to be less confident in nature, thus, they reveal their lack of financial knowledge by choosing to respond ‘Don’t know’ to each question compared to the planners. Overall in all cases, among planners, the percentage of correct responses is higher as compared to the non-planners.

Table 10: Financial Literacy by Retirement Planning

	<i>Planners (%)</i>	<i>Non-Planners (%)</i>
<i>Interest rate question</i>		
Correct	78.7	71.1
Don’t know	3.8	13.2
<i>Inflation question</i>		
Correct	53.5	37.8
Don’t know	14.0	27.7
<i>Time Value of Money question</i>		
Correct	43.7	32.2
Don’t know	7.7	26.3
<i>Summary</i>		
Correct: Interest and Inflation	49.3	34.7
Correct: All three	28.3	20.2
Number correct answers	1.8	1.4
<i>Observations</i>	286	357

Note: Sample consists of prime age group aged 25-65.

To explore the relationship in detail between financial literacy and retirement planning in the Fiji Islands, having socio-demographic variables as controls, we use Binary Logistic regression. Therefore, we examine the association between financial literacy and retirement planning for the current study using ‘Planner’ as the dependent variable, which equals 1 if the respondent is a retirement planner or 0 otherwise, regressed against the financial literacy and several socio-demographic variables (*the list of variable names and its descriptions can be found in Appendix 2 Table A2*).

The financial literacy variables used are as follows:

- All three correct: a dummy variable equal to 1 if respondents were able to answer all three financial literacy questions correctly or 0 otherwise.
- Total number correct: number of correct answers to the financial literacy questions.
- Interest correct, Inflation correct & Time value of money correct: set of 3 dummy variables indicating correct answers to Interest, Inflation and Time Value of Money question respectively.

The test results are reported in Table 11 below.

From the analysis, the *B* coefficients of first two financial literacy variables, All three correct and Total number correct are significant and positive, indicating that each correct answer is associated with increasing odds of having a plan. For instance, the ability to answer all three financial literacy questions correctly increases the likelihood of having a savings plan by approximately 1.34 times (column 1). Furthermore, correctly answering an additional financial literacy question raises the chances of planning by 1.02 times (column 2). The results suggest that an understanding of interest exerts an insignificant impact on retirement planning. However, the knowledge of inflation seems to matter the most with the effect at the magnitude of 50.9% significant at 1% level followed by time value of money significant at 10% level. This shows that individuals need to be conscious of some financial sophistication to make retirement plans. This is important because people who have a lower degree of financial literacy tend to borrow more, accumulate less wealth, and pays more in fees related to financial products. Additionally, they are less likely to invest, more likely to experience difficulty with debt, purchasing power and less likely to know the terms of their mortgages and other loans for example.

Testing Hypotheses 2: There is a significant association between demographic factors and retirement planning.

Next we examine the relationship among retirement planning, financial literacy and socioeconomic characteristics. The list of control variables includes age, gender, region, marital status, education level, employment status, income level and number of children. Other controls include received financial education (such as learning by attending seminars or paid learning to broaden financial knowledge), instance of having a savings account, homeownership (represents a proxy for wealth), and sibling's financial situation (can be a learning curve because while individuals cannot control a sibling's financial situation but they can learn from their sibling's financial experiences).

With respect to demographic variables, results from Table 11 indicate that respondents do tend to think a little about retirement planning from an early age after joining the workforce, however, the likelihood of rigorous planning increases near midlife and tends to decline when retirement is around the corner. For example, from column 1, a respondent of age 40 would 2.13 times more likely to plan for retirement than a respondent who is below 36 years of age. On the other hand, a 55 year old respondent is 0.62 times less likely to plan for retirement than a 30 year old. In addition, specifications show that respondents living in rural areas are significantly less like to plan for retirement, in this case about 0.6 times less likely compares to the urban respondents. Moreover, being married or divorced does not have an effect on retirement planning from our sample. However, those who are widowed differ significantly. This may be because, after the death of a spouse, individuals are forced to carefully plan their finances and act accordingly with the wealth at their disposal. Increasing educational level is strongly correlated with planning. Here, we compare the education attainment to the base category of less than high school. We find that as education level increases, likelihood of planning increases. For example, from column 3, a high school graduate is 5.72 times more likely to plan for retirement than a respondent who has not graduated from high school. Similarly, a respondent with a bachelor's degree is 8.14 times more likely to plan than a non-high school graduate. Furthermore, the positive and significant effect of the workforce category suggests that those who are actively employed are

more likely to plan for retirement. For instance, from column 2, workers are 2.74 times more likely to plan for retirement than those who are not in the labor force yet.

Income level is another factor we find which is highly significant and positive. Just like education, our results also suggest that increasing income levels leads to better planning. For example, from column 3, a respondent who earns more than \$2,000 is almost 3 times more likely to plan for retirement than a respondent who earns below \$500. Planning is also positively correlated with having an additional child as per our results. We find that a respondent who has 2 children for example, is 2.26 times (column 1) more likely to plan for retirement than a respondent who does not have any child(ren).

Looking at other control variables, all of them (received financial education, savings account, homeownership and siblings' financial situation) are statistically significant. From column 1, a respondent who has received financial education is 1.52 times more likely to plan than a respondent who has no financial knowledge. Similarly, an individual with a separate savings account is 4.32 times (column 2) more like to engage in planning than an individual who does not own a separate savings account. In addition, owning a house increases the likelihood of planning by 2.35 times (column 3). On the other hand, a respondent whose sibling is in a better financial situation is 0.38 times less likely to plan for retirement than whose sibling who is in a worse financial situation.

Table 11: *Multivariate analysis of retirement planning (logistic estimates)*

	1		2		3	
	<i>B</i> (<i>S.E</i>)	<i>Odds</i> <i>Ratio</i>	<i>B</i> (<i>S.E</i>)	<i>Odds</i> <i>Ratio</i>	<i>B</i> (<i>S.E</i>)	<i>Odds</i> <i>Ratio</i>
<i>Financial Literacy variables</i>						
All three correct	0.289** (0.194)	1.335				
Total number correct			0.021** (0.101)	1.021		
Interest correct					0.156 (0.256)	0.856
Inflation correct					0.142*** (0.220)	1.153
Time value of money correct					0.039* (0.208)	1.040
<i>Socio-demographic controls</i>						
<i>Age (base: age <= 35)</i>						
Age, 36 - 50	0.758** (0.327)	2.133	0.653** (0.331)	1.922	0.690** (0.332)	1.994

Age, 51 - 65	-0.664** (0.306)	0.515	-0.482** (0.314)	0.617	-0.515* (0.315)	0.598
Male	0.101 (0.202)	1.107	0.099 (0.202)	1.104	0.084 (0.203)	1.087
Rural Region	-0.511* (0.343)	0.600	-0.536* (0.344)	0.585	-0.552* (0.344)	0.576
<i>Marital status (base: single)</i>						
Married	-0.056 (0.180)	0.945	0.036 (0.183)	1.037	0.026 (0.184)	1.026
Divorced	-0.130 (0.426)	0.879	-0.049 (0.430)	0.952	-0.065 (0.432)	0.937
Widowed	-1.291** (0.660)	0.275	-1.092* (0.666)	0.335	-1.136* (0.668)	0.321
<i>Education (base: Less than High School)</i>						
High school graduate	1.732*** (0.408)	5.653	1.734*** (0.408)	5.661	1.744 (0.409)	5.722
Some college (Dip. or Cert.)	2.036*** (0.477)	7.659	2.048*** (0.476)	7.756	2.065*** (0.478)	7.882
University graduate or Higher	2.096*** (0.532)	8.133	2.090*** (0.532)	8.089	2.097*** (0.533)	8.142
<i>Employment status (base: Not in labor force)</i>						
Non-employed	-0.156 (0.898)	0.856	-0.141 (0.900)	0.869	-0.142 (0.900)	0.868
Self-employed	-0.075 (0.416)	0.927	-0.049 (0.417)	0.952	-0.045 (0.417)	0.956
Workers	1.060*** (0.387)	2.886	1.006*** (0.389)	2.735	0.998*** (0.389)	2.713
Retired	-0.658 (0.666)	0.518	-0.588 (0.667)	0.556	-0.617 (0.667)	0.539
<i>Income level (base: Income < \$500)</i>						
Income, \$500 - \$1,000	0.546* (0.657)	1.726	0.529* (0.312)	1.697	0.531* (0.314)	1.700
Income, \$1,000 - \$2,000	0.657* (0.344)	1.928	0.643* (0.344)	1.902	0.645* (0.346)	1.906
Income, > \$2,000	1.113*** (0.387)	3.042	1.090*** (0.386)	2.976	1.096*** (0.388)	2.993
<i>Number of children (base: No children)</i>						
1 Child	0.401 (0.316)	1.493	0.379 (0.317)	1.461	0.363 (0.318)	1.438
2 Children	0.815** (0.336)	2.260	0.803** (0.336)	2.233	0.792** (0.337)	2.207
3 or more children	0.985*** (0.365)	2.679	0.980*** (0.365)	2.664	0.986*** (0.365)	2.680
<i>Other control variables</i>						
Received Financial Education	0.418** (0.203)	1.519	0.408** (0.203)	1.503	0.418** (0.204)	1.519

Savings Account	1.487*** (0.213)	4.424	1.474*** (0.214)	4.368	1.472*** (0.214)	4.359
Homeownership	0.861*** (0.216)	2.365	0.863*** (0.216)	2.369	0.856*** (0.217)	2.354
<i>Sibling situation (base: sibling(s) in worse financial situation)</i>						
Sibling(s) in better financial situation	-0.964* (0.299)	0.381	-0.888* (0.301)	0.412	-0.885 (0.301)	0.413
Constant	-3.647 (0.606)		-3.658 (0.612)		-3.555 (0.625)	
No. of observations	643		643		643	
Pseudo R ²	35.7%		35.7%		35.8%	
-2 Log-likelihood	684.17		684.30		683.66	
X ² (df), p-value	199.36 (30), p < 0.01		199.23 (30), p < 0.01		199.87 (32), p < 0.01	
Hosmer & Lemenshow test	p = 0.233 (> 0.05)		p = 0.309 (> 0.05)		p = 0.417 (> 0.05)	
Classification accuracy	74.3%		74.2%		74.0%	

Note: Standard errors are reported in parentheses. * p < 0.1, ** p < 0.05 and *** p < 0.01.

Overall, our models roughly explain 36% of the variations in the outcome. The reduced -2 Log-likelihood suggests that the models explain more of the variance in the outcome and is significantly better (X^2 , $p < 0.05$). The models are also good fit to the data as per Hosmer & Lemenshow test, $p > 0.05$, and correctly classify the outcome for approximately 74% of the cases.

Overall we find that financial literacy is significantly and positively related to retirement planning. From Table 12, by answering all three financial literacy questions correctly raises the chances of planning by 28% and answering an additional question increases the chances of planning by 2%. Looking at column 3, although all the coefficients of the financial literacy variables are positive, only the coefficient of inflation is significant at the 1% level; thus, of the three concepts measured in the current study, understanding of inflation related information is perhaps the most important factor for developing a savings plan. Moreover, we find that higher education attainment and increasing income levels raises the likelihood of planning significantly. However, age follows a hump shaped formation as planning is low at young age and tends to increase significantly near midlife and gradually decreases as retirement approaches near. Other critical factors found to be highly significant and raise the likelihood of planning are financial

education received from other sources, instance of having a savings account that is separate from day-to-day operating account(s), owning a house and learning from siblings' who were in worse financial situations.

6. Conclusion

The findings of this present study paint a troubling picture of the current state of financial literacy rate and retirement planning behaviors in the Fiji Islands. In addition, many respondents lack knowledge of key financial concepts in order to appropriately plan for retirement. For instance, only 24.3% of the sample respondents were able to answer all three financial literacy questions. In addition, 43.2% of respondents indicated that they had tried to figure out to plan for retirement from which only 28.3% were able to answer all three financial literacy questions correctly. The results also point to a positive link between financial literacy and retirement planning in the Fiji Islands and financial literacy complemented with socio-demographic factors also significantly contributes to retirement preparedness. This link is important because being able to develop and implement a retirement plan is the key to retirement wealth accumulation. It is also a matter of concern that the most vulnerable group from our sample are the least educated, low income earners and those who are not employed, and as a result these groups are most likely to end up making bad financial decisions. Thus, enhancing financial literacy is very critical to successful retirement, especially among these most vulnerable groups.

The present study is not of a comprehensive nature. For instance, OECD INFE, through has established an extensive procedure on assessing financial literacy on a country level which has eight pillars of financial literacy assessing categories ranging from basic to advanced levels. However, undertaking these kinds of comprehensive research requires an enormous amount of assistance in terms of financial resources, working groups and collaboration with government and other working partners. Thus, to avoid these kinds of complexities, the current study used a simpler approach (and therefore less comprehensive one) to assess financial literacy levels. Future researches can be more precise in assessing financial literacy levels on a broader perspective.

Today, as the long term shift continues toward individual responsibility for retirement savings, investment and decumulation, it is becoming increasingly significant to evaluate which programs can best help individuals to become good financial decision makers. Hence, financial educational programmes will be most effective if targeted towards different population subgroups. Policy makers and governments around the

world have advocated for increased expenditures on financial literacy in hope of educating households and individuals to become better decision makers and to improve the ultimate goal of retirement planning and this process should be strengthened in the Fiji Islands. In sum, as it has been concluded by similar studies around the world and that according to this study I find that Fiji Islands is no different, financial literacy is critical to retirement security.

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Appendix

Appendix 1

Survey Questionnaire (English and Fijian versions)

Thank you for agreeing to participate in this survey about Financial Literacy and Retirement Planning. The survey will take approximately 15-20 minutes to complete.

Most questions only require you to tick a box. All your answers to the questions are strictly anonymous, i.e. no one involved in this study can identify you personally and no one will contact you after the survey. Your answers will solely be used for academic research purposes only for a Master in Finance dissertation paper at Faculty of Economics in University of Porto, Portugal.

The survey has 5 sections which are all compulsory. The first section is on Demographics containing simple questions about you. The second and third section is to get your feedback on Retirement Planning and FNPF. The fourth section, Financial Literacy, tests your basic knowledge of financial concepts concluding with questions on your Personal Traits, Attitudes and Behaviours related to financial management.

English Version	Fijian Version
<i>Section 1: Demographics</i>	<i>Wase 1: Na I tutu ni bula</i>
1. I am a:	1. O au na:
<input type="radio"/> Male <input type="radio"/> Female	<input type="radio"/> Turaga <input type="radio"/> Marama
2. Which of the following best describes your race or ethnicity?	2. O cei vei ratou na?
<input type="radio"/> Indo-Fijian <input type="radio"/> iTaukei	<input type="radio"/> Kai Idia <input type="radio"/> Kai Viti
<input type="radio"/> Mixed race <input type="radio"/> Other	<input type="radio"/> Kailoma <input type="radio"/> Se dua tale
3. What is your age?	3. Yabaki vica?
<input type="text"/>	<input type="text"/>
4. How well do you speak English?	4. E vakacava na nomu vosataka na vosa vakavavalagi?
<input type="radio"/> Very well <input type="radio"/> Well	<input type="radio"/> Matai vinaka sara <input type="radio"/> Kila vakalailai
<input type="radio"/> Not well <input type="radio"/> Not at all	<input type="radio"/> Sega soti ni kila vinaka <input type="radio"/> Sega ni kila
5. What is your marital status?	5. O sa vakawati se sega?
<input type="radio"/> Single <input type="radio"/> Married	<input type="radio"/> Sega ni vakawati <input type="radio"/> Vakawati
<input type="radio"/> Divorced or separated <input type="radio"/> Widowed	<input type="radio"/> Dawai <input type="radio"/> Yada
<input type="radio"/> De-facto relationship	<input type="radio"/> Tiko kei dua - sega ni vakamau
6. What is the highest level of qualification you have?	6. Nai vakatagedegede ni vuli cava o sa yacova?
<input type="radio"/> PhD <input type="radio"/> Masters or equivalent	<input type="radio"/> Vuniwai (PhD) <input type="radio"/> Masters
<input type="radio"/> Post Graduate <input type="radio"/> Bachelors	<input type="radio"/> Setifikiti ni oti na diqari <input type="radio"/> Diqari
<input type="radio"/> Diploma <input type="radio"/> Certificate	<input type="radio"/> Dipaloma <input type="radio"/> Setifikiti
<input type="radio"/> Form 7 (FSFE) <input type="radio"/> Form 6 (FSLC)	<input type="radio"/> Fomu 7 (FSFE) <input type="radio"/> Fomu 6 (FSLC)
<input type="radio"/> Did not complete secondary school	<input type="radio"/> Sega ni oti na seconitari <input type="radio"/> Varaimary
<input type="radio"/> Primary school <input type="radio"/> Did not go to school	<input type="radio"/> Sega sara ni vuli

7. What is your current employment status?
- ☐ Full time employee ☐ Part time employee
- ☐ Self employed (own business, farm, etc)
- ☐ Student ☐ Retired
- ☐ Unable to work due to disability
- ☐ Unemployed or temporary laid off
- ☐ Homemaker
8. Which income bracket from below do you belong to (including if you receive pensions)?
- ☐ I am a student and don't earn
- ☐ Nil income
- ☐ \$1 - \$500 per month
- ☐ \$501 - \$1,000 per month
- ☐ \$1,001 - \$1,500 per month
- ☐ \$1,501 - \$2,000 per month
- ☐ More than \$2,000 per month
9. Which of the following best describes your household makeup?
- ☐ Nuclear family ☐ One parent family
- ☐ Extended family ☐ I live alone
- ☐ Other
10. Who is mostly responsible for major financial decisions in your household?
- ☐ You ☐ Someone else
- ☐ You and someone are equally responsible
11. How many people in your household are financially dependent on you?
- ☐ None ☐ 1
- ☐ 2 ☐ 3 or more
12. In a typical month, how difficult is it for you to cover your expenses and pay your bills?
- ☐ Very difficult
- ☐ Somewhat difficult
- ☐ Not difficult at all
- ☐ Someone helps me cover my expenses (parents, spouse, friends, etc)
7. Na cava nai tuvaki ni nomu cakacaka ena gauna oqo?
- ☐ Cakacaka tudei ☐ Sega ni cakacaka tudei
- ☐ Cicivaki nomu bisinisi ☐ Gonevuli
- ☐ Vakacegu mai na cakacaka
- ☐ Sega ni rawa ni cakacaka ena vuku ni Tuvaki ni y
- ☐ Sega ni cakacaka se vakacegui va tudei
- ☐ Cakacaka tuga I vale
8. Na loma ni vakatagedegede ni sau cava beka o okati kina (wili kina na peniseni)?
- ☐ Gonevuli - sega ni veisaumi
- ☐ Sega nai vurevure ni lavo
- ☐ \$1 - \$500 na veivula
- ☐ \$501 - \$1,000 na veivula
- ☐ \$1,001 - \$1,500 na veivula
- ☐ \$1,501 - \$2,000 na veivula
- ☐ Sivia na \$2,000 na veivula
9. E tuvani vakacava na nomuni matavuvale?
- ☐ Matavuvale walega
- ☐ Dua ga nai tubutubu
- ☐ Matavuvale kei na veiwekani
- ☐ Tu duadua ☐ Tu vakaveiwekani
10. O cei e vakatulewataka na ka vaka i lavo ena nomu matavuvale?
- ☐ O au ☐ Edua tale
- ☐ O au kei na dua tale rau wasea vaka tautauvata
11. Era lewe vica na lewe ni matavuvale era vakararavi vei iko vakai lavo?
- ☐ Sega ni dua ☐ Dua
- ☐ Rua ☐ Sivia na lewe tolu
12. Ena dua na vula, e dau vacava na dredre ni nomu dau wasewasea na sausaumi ni nomu bili ivale?
- ☐ E dredre saraga
- ☐ Bau dredre toka
- ☐ Sega ni dredre
- ☐ Au dau vukei mai vei (tubutubu, watiq, tokani, etc.)

Section 2: Retirement Planning	Wase 2: Nai I vunavuci ni yabaki ni vakacegu
<p>13. When do you expect to retire:</p> <p><input type="radio"/> 1 - 5 years from now</p> <p><input type="radio"/> 5 - 10 from now</p> <p><input type="radio"/> After more than 10 years</p> <p><input type="radio"/> I am retired</p> <p><input type="radio"/> I am still a student</p> <p>14. <i>Only answer if you are not retired:</i> Did you plan or tried to figure out how much you needed to save for retirement?</p> <p><input type="radio"/> Yes <input type="radio"/> No</p> <p><input type="radio"/> I am expecting to receive inheritance to financially rely upon during retirement</p> <p>15. <i>Only answer if you are retired:</i> Did you planned or tried to figure out how much you needed to save for retirement?</p> <p><input type="radio"/> Yes</p> <p><input type="radio"/> No</p> <p><input type="radio"/> I received inheritance to financially rely upon during retirement</p> <p>16. Which of the following statements best describes your thoughts about the financial aspects of retirement?</p> <p><input type="radio"/> I have not thought about what savings I will need for retirement</p> <p><input type="radio"/> I have checked out my current savings position and stared to think about what I will need for retirement</p> <p><input type="radio"/> I have a firm idea of what I need for retirement but I am not on track to reach my savings goal</p> <p><input type="radio"/> I have a firm idea of what I need for retirement but I am on track to reach my savings goal</p> <p><input type="radio"/> I am now retired and I had accumulated enough savings to take care of my expenses</p> <p><input type="radio"/> I am now retired and I had not accumulated enough savings to take care of my expenses</p>	<p>13. Ena gauna cava beka ona qai cegu kina mai na cakacaka?</p> <p><input type="radio"/> 1-5 na yabaki mai qo</p> <p><input type="radio"/> 5-10 na yabaki mai qo</p> <p><input type="radio"/> Sivia na 10 na yabaki mai qo</p> <p><input type="radio"/> Au sa vakacegu mai na cakacaka</p> <p><input type="radio"/> Au se gonevuli tiko</p> <p>14. <i>Sauma ga na taro, kevaka O sibera ni vakacegu.</i> O sa bau navunavuci se tuvana oti tu na levu ni lavo o na gadreva niko sa cegu ena cakacaka?</p> <p><input type="radio"/> Io <input type="radio"/> Sega</p> <p><input type="radio"/> Au nanamaki me'u taura e dua na wase ni lavo me vaka na lisi, wili, se lavo mai na qele</p> <p>15. <i>Sauma ga na taro kevaka O sa cegu na cakacaka:</i> O sa bau navunavu se tuvana oti tu na levu ni lavo o na gadreva niko sa cegu ena cakacaka?</p> <p><input type="radio"/> Io <input type="radio"/> Sega</p> <p><input type="radio"/> Au sa taura e dua na wase ni lavo mai tuba me vaka na wili, ni dua na wekaqu, lisi se lavomai na qele</p> <p>16. Ena vaka tutu toka qo era, e vei vei ratou o nanuma ni vinaka ena ka ni bula vakailavo ni vakacegu?</p> <p><input type="radio"/> Au se sega ni tuvalaka e dua na ka vailavo me baletana noqu vakacegu</p> <p><input type="radio"/> Au vakaraica na ka me baleta na noqu maroroi lavo, au na qai tuvalaka na ka me baleta na noqu sana vakacegu ena cakacaka</p> <p><input type="radio"/> Au sa kiladeivaki tu na ka meu na caka niu cegu mai na cakacaka, ia au se sega tiko ni yacova na noqu maroroi sede</p> <p><input type="radio"/> Au sa kiladeivaki tu na ka meu na caka niu cegu ma na cakacaka, ia au tiko ni yacova na noqu maroroi sede</p> <p><input type="radio"/> Au sa vakacegu mai na cakacaka, sa tiko talega nai lavo au maroroy a me baleta na I sau ni noqu bula ena veisiga</p> <p><input type="radio"/> Au sa vakacegu. Au sega ni maroroy a e dua na sede me vukei ka ni noqu bula ena veisiga</p>

<i>Section 3: FNPF Membership</i>	<i>Wase 3: Leweni FNPF</i>
<p>17. Are you a member of FNPF?</p> <p><input type="radio"/> Yes <input type="radio"/> No</p> <p><input type="radio"/> Don't know</p> <p><input type="radio"/> I am a member of another fund</p>	<p>17. O lewana tu beka na FNPF?</p> <p><input type="radio"/> Io <input type="radio"/> Sega <input type="radio"/> Au sega ni kila</p> <p><input type="radio"/> Au lewena tale tu e dua na vanua ni maroroi lavo</p>
<p>18. Are you or someone else making contributions to your fund?</p> <p><input type="radio"/> Yes, me <input type="radio"/> Yes, someone else</p> <p><input type="radio"/> Don't know <input type="radio"/> No contributions at all</p> <p><input type="radio"/> Not applicable</p>	<p>18. O iko se dua tale e musumusu ena nomu FNPF?</p> <p><input type="radio"/> Io, o au <input type="radio"/> Io, e dua tale</p> <p><input type="radio"/> Sega ni kila <input type="radio"/> Sega ni maroroi lavo</p> <p><input type="radio"/> Sega ni oka ena taro oqori</p>
<p>19. Do you know how much of a person's salary an employer is currently required contributing towards FNPF?</p> <p><input type="radio"/> 10% <input type="radio"/> 9% <input type="radio"/> 8%</p> <p><input type="radio"/> Depends on the employer <input type="radio"/> Don't know</p>	<p>19. O kila beka e vica na musumusu e lavaki mai na kabani me musuka baleti ira na tamata cakacaka?</p> <p><input type="radio"/> 10% <input type="radio"/> 9% <input type="radio"/> 8%</p> <p><input type="radio"/> E vakatau ena kabani ni cakacaka</p> <p><input type="radio"/> Au sega ni kila</p>
<p>20. Are you aware of the retirement age in Fiji?</p> <p><input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Don't know</p>	<p>20. O kila beka na yabaki ni vakacegu mai na cakacaka e Viti?</p> <p><input type="radio"/> Io <input type="radio"/> Sega <input type="radio"/> Au sega ni kila</p>
<p>21. What is the current retirement age in Fiji?</p> <p><input type="radio"/> 50 <input type="radio"/> 55 <input type="radio"/> 60</p> <p><input type="radio"/> 65 <input type="radio"/> Other</p>	<p>21. Na cava na yabaki e dodonu me dua e cegu mai kina na cakacaka e Viti?</p> <p><input type="radio"/> 50 <input type="radio"/> 55 <input type="radio"/> 60</p> <p><input type="radio"/> 65 <input type="radio"/> Dua tale:</p>
<p>22. Do you know if people can make voluntary contributions to their FNPF funds?</p> <p><input type="radio"/> Yes, they can <input type="radio"/> No, they can't <input type="radio"/> Don't know</p>	<p>22. O kila beka e rawa nira solia wale na tamata musu ilavo kina lavo musuki FNPF?</p> <p><input type="radio"/> Io <input type="radio"/> Sega <input type="radio"/> Au sega ni kila</p>
<p>23. Have you ever made voluntary contributions to top up your FNPF funds or other superannuation fund that you are a member of?</p> <p><input type="radio"/> Yes <input type="radio"/> No</p> <p><input type="radio"/> Don't know <input type="radio"/> Refuse to answer</p>	<p>23. O sa bau sasaga mo solia wale nomu I musumusu ena nomu FNPF me tubu cake, se dua tale na taba ni musumusu o lewena tiko?</p> <p><input type="radio"/> Io <input type="radio"/> Sega <input type="radio"/> Au sega ni kila</p> <p><input type="radio"/> Au bese ni sauma</p>
<p>24. "You are allowed to borrow from your superannuation account such as for housing assistance, education, medical assistance, etc."</p> <p><input type="radio"/> True <input type="radio"/> False</p> <p><input type="radio"/> Don't know</p>	<p>24. "E dina ni rawa niko tauri lavo mai na nomu FNPF me vaka na ka ni vuli, tauvimate kei na so tale."</p> <p><input type="radio"/> Dina <input type="radio"/> Sega ni dina <input type="radio"/> Au sega ni kila</p>
<p>25. Are you aware of your pension options after retirement?</p> <p><input type="radio"/> Yes <input type="radio"/> No</p> <p><input type="radio"/> Don't know</p>	<p>25. O kila beka na vei tabana ni nomu peniseni niko sa cegu na cakacaka?</p> <p><input type="radio"/> Io <input type="radio"/> Sega <input type="radio"/> Au sega ni kila</p>

26. Generally, how informed are you with FNPF's policies, updates and reforms?

- ☐ Well informed ☐ Somewhat informed
☐ Not informed at all ☐ Refuse to answer

26. E vakaavei beka na nomu kila na ka vakalawa kei na veiveisau ni FNPF?

- ☐ Au kila vinaka ☐ Au sega ni kila vinaka
☐ E sega ni bau tukuni vei au
☐ Au bese ni sauma

Section 3: Financial Literacy

27. On a scale from 1-5, where 1 means very low and 5 means very high, how would you assess your understanding of basic financial skills?

- ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

28. Suppose you had \$100 in a savings account and the interest rate was 2% per year. After 5 years, how much do you think you would have in the account if you left the money to grow?

- ☐ More than \$102 ☐ Exactly \$102
☐ Less than \$102 ☐ Don't know
☐ Refuse to answer

29. Imagine that the interest rate on your savings account was 1% per year and inflation was 2% per year. After 1 year, would you be able to buy more than, exactly the same as, or less than today with the money in this account?

- ☐ More than today ☐ Exactly the same
☐ Less than today ☐ Don't know
☐ Refuse to answer

30. Do you have any knowledge about investment or capital markets such as South Pacific Stock Exchange (SPSE) or Capital Markets Development Authority (CMDA)?

- ☐ Yes, I am well informed and often engage in investments
☐ Well informed ☐ Somewhat informed
☐ Not informed at all ☐ Don't know

31. On a scale from 1-5, where 1 means very low and 5 means very high, how would you assess your understanding of the investment options for your retirement savings?

- ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Wase 4: Kilaka vakai lavo

27. Enai vakatagedegede 1-5, na 1 e tautauvata ni lailai sara, na 5 e levu cake sara, ona vakatautauvatani taka vakacava na nomu kila eso naka vakailavo?

- ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

28. Ke \$100 e tiko ena nomu akaude ni baqe, 2% na kena tubu ena vei yabaki. Ni oti e lima na yabaki, ena vica beka na levu ni lavo ona kumuna rawa ena nomu akaude?

- ☐ Sivia na \$102 ☐ E \$102
☐ Lailai mai na \$102 ☐ Sega ni kila
☐ Au bese ni sauma

29. Ke 1% na tubu ena vanua o vakacuruma tiko kina na nomu ilavo ka 2% na tubu ena veiyabaki. Ni cava e dua na yabaki, na levu ni ka o rawa ni volia:

- ☐ E sivia mai na kena nikua
☐ E tautauvata vinaka
☐ E lailai mai nakena nikua ☐ Sega ni kila
☐ Au bese ni sauma

30. O bau kila tu eso na vanua ni vakatubu ilavo me vaka na South Pacific Stock Exchange (SPSE) se Capital Markets Development Authority (CMDA)?

- ☐ Io, au kila vinaka, au dau vakaitavi ena ka me baleta na maroroi lavo
☐ Au kila vinaka
☐ Au kila toka vaka lailai
☐ E sega ni bau tukuni vei au
☐ Au sega sara ga ni kila

31. Enai vakatagedegede 1-5, na 1 e tautauvata ni lailai sara, na 5 e levu cake sara, ona vakatautauvatani taka vakacava na nomu vakatubu ilavo kei na nomu ialvo me maroroi ni vakacegu?

- ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

32. Suppose you invest \$2,000 in securities which pay 10% compounded annually. How many years do you think will it take for your investment to double to \$4,000?
- ☐ Between 0 - 5 years ☐ Between 5 - 10 years
- ☐ Between 10 - 15 years ☐ Don't know
- ☐ Refuse to answer
33. Have you or someone else in your family ever experienced a drastic and unexpected fall in savings or income?
- ☐ Yes ☐ No ☐ Don't know
34. Did you ever receive any financial education during your school/university years or at your work place?
- ☐ Yes ☐ No
32. O vakacuruma e \$2,000 ka kena tubu e 10% dua na yabaki. E vica tale na yabaki me qai vakaruataki (\$4,000) kina na nomu ilavo?
- ☐ T adrua ni sucu kina yabaki 5
- ☐ T adrua ni 5-10 na yabaki
- ☐ T adrua ni 10-15 na yabaki
- ☐ Sega ni kila
- ☐ Au bese ni sauma
33. E dua nomu I matavuvale se ko iko bau vakila na lutu ni rawa I lavo se maroroi I lavo?
- ☐ Io ☐ Sega ☐ Au sega ni kila
34. E bau dua na veivuke ni vuli ni vakayagataki vakailavo ena nomu gauna ni vuli ena univesiti se na vanua ni nomu cakacaka?
- ☐ Io ☐ Sega

Section 5: Personal Traits, Attitude and Behaviors related to financial management

Wase 5: Nomu I tovo, se I digidigi e na vuku ni veika vakai lavo

35. How confident are you that you could come up with \$1,000 if an unexpected need arose within the next month?
- ☐ I am certain I could come up with full \$1,000
- ☐ I could probably come up with \$1,000
- ☐ I could probably NOT come up with \$1,000
- ☐ I am certain I could NOT come up with full \$1,000
- ☐ Don't know
36. In the past 12 months, how often did you run out of money before the end of the month?
- ☐ Never ☐ Almost never
- ☐ Sometimes ☐ Often ☐ Always
37. Do you have a savings account (or any other kind of account(s) in which you maintain your savings) that is separate from your day-to-day operating account?
- ☐ Yes ☐ No
38. If you lost your main source of income, how long could you continue to cover living expenses without borrowing any money from elsewhere?
- ☐ Less than a week
- ☐ At least 3 weeks but not one month
- ☐ At least 1 month but not 3 months
- ☐ At least 3 months but not 6 months
- ☐ More than 6 months
35. O nanuma ni o na rawata vakacava e \$1,000.00 kevaka e lavaki yani vei iko e dua nai tavi e sega ni namaki ena vula mai qo?
- ☐ Au vakabauta niu na rawata na \$1,000
- ☐ Au na rawata beka na \$1,000
- ☐ Au na tovolea meu rawata na \$1,000 ia au sega ni vakadeitaka
- ☐ Au sa vakadeitaka niu na sega ni rawata na \$1,000
- ☐ Sega ni kila
36. Ena yabaki sa oti, e vakavica na kena sega vei iko nai lavo ni bera ni cava e dua na vula?
- ☐ Sega sara ☐ Sega soti
- ☐ So na gauna ☐ Veitaravi ☐ Veigauna
37. E tiko e dua na nomu akaude ni maroroi lavo e dua tani mai na nomu akaude ni ka curu tiko kina na kemu isau?
- ☐ Io ☐ Sega
38. Ke sa sega na nomui vurevure ni lavo, ena vaka evei beka na kena dede ni nomu sotava na ka ni nomu bula vakailavo ena veisiga, ena nomu vakuawai iko mai na kere sede mai na vei vanua eso?
- ☐ Lailai mai na dua na macawa
- ☐ Rauta ni tolu na macawa, sega ni dua na vula taucoko
- ☐ Via rauta ni dua na vula ia sega ni tolu na vula
- ☐ Via rauta ni tolu na vula ia sega ni ono na vula
- ☐ Sivia ni ono na vula

39. Do you have children?

☐ Yes ☐ No

40. How many children do you have?

How many of them are financially dependent on you?

41. In the past 12 months, have you ever taken any financial advice from a professional advisor or institution when deciding between which financial product to choose such as loan, student loan, hire purchase, bank account, etc?

☐ Yes ☐ No

☐ I make my own decisions when it comes to finance.

42. Do you own a house, rent, or live with someone else?

☐ Own a house ☐ Renting

☐ Living with family, relatives, etc

43. Do you think you have more assets than liabilities? (Assets are what you own such as house, car, cash, etc and liabilities are what you owe such as loan, mortgage, etc.)

☐ Yes ☐ No ☐ Don't know

☐ I haven't figured it out

44. Would you say that your oldest sibling (brother or sister) is in worse, better, or about the same financial situation than you?

☐ Worse ☐ Better ☐ About the same

☐ Don't know ☐ Don't have an older sibling

45. How would rate your parent's understanding on financial matters on a scale from 1-5, where 1 means very low and 5 means very high,? Think about the parent who is or was mostly responsible for major financial decisions.

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

39. O vakaluvēni?

☐ Io ☐ Sega

40. E radou lewe vica na luvemu?

E radou lewe vica e tiko vata kei iko ko qarava?

41. Ena vula 12 sa oti, o sa bau taro vakasala mai vei ira na kena dau vakai lavo, se koronivuli, ena nomu vakatataro ena ka vakailavo ona digitaka, me vaka na dinau ena baqe, dinau vei ira na gone vuli, tauri yaya vaka dinau, dinau main a baqe?

☐ Io ☐ Sega

☐ Au cakava ga na noqu vakatulewa ena ka me baleta na noqui lavo

42. E sa tiko beka na nomu vale, se ko rede, se ko tiko vaka raravi?

☐ Tiko na noqu vale ☐ Au rede tiko

☐ Tiko vata kei ira na veiwekani

43. O nanuma ni levu tiko na nomui 'Yau' mai na nomu 'Dinau'? ('Yau' me vaka Na nomu I vale, motoka, lavo maroroi. 'Dinau' me vaka na tauri lavo main a baqe se mortgage, etc)

☐ Io ☐ Sega ☐ Au sega ni kila

☐ Au se sega ni vakanananu kina

44. E rawa beka niko tukuna nai tuvaki ni ka vakai lavo nei tacimu e ca, vinaka se tautauvata ga kei na nomui tutu vakai lavo?

☐ Sega ni vinaka ☐ Vinaka sara

☐ Via tautau vata ☐ Sega ni kila

☐ E sega na tuakaqu

45. Enai vakatagedegede 1-5, na 1 e tautauvata ni lailai sara, na 5 e levu cake sara, o cei vei rau nai tubutubu e vakatulewa taka na ka me baleta na ka vakai lavo. E nomu vakatulewa, e vakai vei nona kila nai I ka e ganiti me vaka na I lavo maroroi, lavo e vakayagataki, kei na I veika eso me baleta nai lavo.

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

...Thank you for participating...

Survey question by question breakdown supported by Literature

#	Questions	Importance	Supported Literature
1	I am a:	It has been concluded in previous studies that financial literacy levels amongst the women group is lower than man. This question will test this for Fiji.	Question found in all related surveys.
2	Which of the following best describes your race or ethnicity?	Fiji has 2 major ethnic groups: Fijians and Indians which make up 95% of Fiji's total population. This question will test which ethnic group knows more. It is also instructive to compare financial literacy differences along racial/ethnic lines. Prior research has found quite different patterns of wealth and retirement saving for these population subgroups.	Question found in all related surveys.
3	What is your age?	It has been found in other studies that literacy increases with age. This question will test this.	USA (Lusardi and Beeler, 2007; Lusardi and Mitchell, 2007a, 2008b; Ariel Investments, 2009)
4	How well do you speak English?	Fiji's has three major languages: English being official, Fijian and Hindi. Since all major activities in Fiji are carried out in English language such as education at all levels, this question will help assess somewhat if being able to speak English is related to financial literacy and retirement planning.	Was used in few surveys such as in Australia and Japan.
5	What is your marital status?	This question is a general one which appeared in all the prior surveys in other countries.	Question found in all related surveys.
6	What is the highest level of qualification you have?	To test if the level of financial education is highly correlated with financial literacy and retirement planning.	Question found in all related surveys.
7	What is your current employment status?	To test how people of different employment status perform.	Question found in all related surveys.
8	Which income bracket from below do you belong to (including if you receive pensions)?	Just like education, it is assumed that individuals with lower income level are least likely to be financially literate.	Question found in all related surveys.
9	Which of the following best describes your household makeup?		
10	Who is mostly responsible for major financial decisions in your household?		
11	How many people in your household are financially dependent on you?	These set of questions will basically help build a more general profile of the respondent in terms of their financial management.	Question found in all related surveys.
12	In a typical month, how difficult is it for you to cover your expenses and pay your bills?		

#	Questions	Importance	Supported Literature
13	When do you expect to retire:	To gather the respondents predicted retirement. If they are retired than there is an option to choose "I am retired" from the list of choices.	Question found in all related surveys.
14	Have you plan or tried to figure out how much you need to save for retirement?	These 3 questions will compare the level of financial literacy between retirement planners and non-planners. The responses will to these questions will be used to examine the relationship among retirement planning, financial literacy and socioeconomic characteristics through multivariate analysis. Research has shown that the likelihood of planning for retirement is highly correlated with financial literacy and education, and the relationship remains strong even after controlling for wealth and other demographic variables (e.g., Bernheim, 1995; Lusardi and Mitchell, 2007, 2011 inter alia).	Question found in all related surveys.
15	Before you retired, did you plan or tried to figure out how much you needed to save for retirement?		Question found in all related surveys.
16	Which of the following statements best describes your thoughts about the financial aspects of retirement?		Question found in all related surveys.

#	Questions	Click on the cell to see the list of responses	Importance	Supported Literature
17	Are you a member of FPNF?			
18	Are you or someone else making contributions to your fund?			
19	Do you know how much of a person's salary an employer is currently required contributing towards FPNF?			
20	Are you aware of the retirement age in Fiji?			
21	What is the current retirement age in Fiji?			
22	Do you know if people can make voluntary contributions to their FPNF funds?			
23	Have you ever made voluntary contributions to top up your FPNF funds or other superannuation fund that you are a member of?			
24	You are allowed to borrow from your superannuation account such as for housing assistance, education, medical assistance, etc.			
25	Are you aware of your pension options after retirement?			
26	Generally, how informed are you with FPNF's policies, updates and reforms?			

FPNF is the only mandatory defined benefit (DC) superannuation fund in Fiji whereby all employers and employees are required to make compulsory contributions to the employees account. While retirement savers do not have to decide whether to participate in retirement saving plans, as they are mandatory, they are responsible for decisions relating to the plan in which superannuation savings are managed and accumulate, for plan management (such as consolidation of multiple plans), for choice of investments, for whether to make or increase voluntary contributions, for whether to seek and use financial advice, and for which benefit(s) to take at retirement. Regardless, the efficient functioning of the system depends on participants being well-informed and having sufficient financial skills. The responses to these questions will provide additional insight into whether this is a valid presumption. Fiji's retirement age was initially at 60 years and in April 2009 the retirement age was slashed down to 55 years with immediate effect which busted a sigh of distress amongst the working population. Previous literatures has identified poor financial literacy and lack of knowledge about superannuation across different country population and have specifically linked objective measures of financial literacy with retirement planning. Croy et al. (2010) investigates how self-assessed (rather than objective) financial knowledge relates to two financial behaviors, specifically the intention to contribute extra to retirement plans and the intention to change investment allocations.

These questions are generally found in most of the country surveys in their specific contexts. I have modified some questions to suit the Fiji case.

FPNF has a pre-retirement borrowing options in case of housing assistance, medical grounds, or education. Also, after retirement certain options are available to the participants on the utilization of their pensions. But these policies only look good on paper if the participants are not aware of their options. These questions investigates the extent to which Fijians are equipped to make decisions in this pension and financial landscape and, in particular, whether they are sufficiently knowledgeable about economics and finance to plan for retirement.

#	Questions	Importance	Supported Literature
27	On a scale from 1-5, where 1 means very low and 5 means very high, how would you assess your understanding of basic financial skills?	To complement the questions measuring actual financial literacy, this question will ask respondents about how they assess their own financial knowledge. This is useful to identify any mismatch between perceived versus actual knowledge. Past studies show that although respondent respond poorly to the financial literacy questions, they give higher rating for their self assessed financial skills.	USA survey, Japan, the Netherlands
28	Suppose you had \$100 in a savings account and the interest rate was 2% per year. After 5 years, how much do you think you would have in the account if you left the money to grow?		
29	Imagine that the interest rate on your savings account was 1% per year and inflation was 2% per year. After 1 year, would you be able to buy more than, exactly the same as, or less than today with the money in this account?	To evaluate financial knowledge, respondents are asked these questions which covers fundamental concepts of economics and finance, expressed as they would be in everyday transactions, such as simple calculations about interest rates and inflation and workings of risk diversification. Question 28, 29 and 32 will indicate whether respondents have command of the economic concepts most fundamentally related to saving. Question 30 and 31 evaluates knowledge of investments and time value of money crucial to making informed investment decisions. These questions were first designed by Lusardi and Mitchell to be used in the Health and Retirement Study in USA in 2004 and have been used as a basis for many studies around the world.	Appear in all prior studies.
30	Do you have any knowledge about investment or capital markets such as South Pacific Stock Exchange (SPSE) or Capital Markets Development Authority (CMDA)?		
31	On a scale from 1-5, where 1 means very low and 5 means very high, how would you assess your understanding of the investment options for your retirement savings?		
32	Suppose you invest \$2,000 in securities which earns 10% interest per year. How many years do you think will it take for your investment to double to \$4000?	Related to question interest as a test of financial literacy. Related to question 28.	Appear in all prior studies.
33	Have you or someone else in your family ever experienced a drastic and unexpected fall in savings or income?	To proxy for household shocks and liquidity constraints, the responses to this question will add an indicator for having a large and unexpected drop in income, for non-work (which includes the unemployed), and for the number of children financially dependent on the respondent.	Appear in most studies such as USA, Japan, Australia.
34	Did you ever receive any financial education during your school/university years or at your work place?	Education or having attained qualifications such as a degree alone does not account for having financial knowledge. That is, financial literacy might be the result of choice, so, for example, some people who will plan for retirement might invest in financial education that in turn would boost their financial literacy level. For this reason, a positive relationship between planning and financial literacy could be contaminated due to the reverse causality. The responses of this question will be used as one of the indicator variable in the Instrumental Variable approach.	Appear in most studies such as USA, the Netherlands, Australia.

#	Questions	Click on the cell to see the list of responses	Importance	Supported Literature
35	How confident are you that you could come up with \$1,000 if an unexpected need arose within the next month?			
36	In the past 12 months, how often did you run out of money before the end of the month?			
37	Do you have a savings account that is separate from your day-to-day operating account?			
38	If you lost your main source of income, how long could you continue to cover living expenses without borrowing any money from elsewhere?			
39	Do you have children?			
40	How many children do you have? How many of them are financially dependent on you?			
41	In the past 12 months, have you ever taken any financial advice from a professional advisor or institution such as a bank when deciding between which financial product to choose such as loan, student loan, hire purchase, bank account, etc?			
42	Do you own a house, rent, or live with someone else?			
43	Do you think you have more assets than liabilities? (Assets are what you own such as house, car, cash, etc and liabilities are what you owe such as loan, mortgage, etc.)			
44	Would you say that your oldest sibling (brother or sister) is in worse, better, or about the same financial situation than you?			
45	How would rate your parent's understanding on financial matters? Think about the parent who is or was mostly responsible for major financial decisions.			

These questions will help know the respondents financial management skills.

Question found in all related surveys.

The response to this question will represent a variable in the regression. Also, Several studies have emphasized the importance of peers for financial knowledge and behavior (van Rooij et al., 2011). Having children in a household who are receiving some financial education in schools can overall improve financial literacy of that household. In Fiji financial education at all levels of the school curriculum have been introduced since 2009. Also having many children requires enormous amount of planning. This can also lead to liquidity constraints.

Question found in most surveys such as USA, Australia, Japan.

While financial advice is readily available in Fiji, it would be interesting to know if participants actually make use of these services as to increase their financial literacy and planning knowledge. Though financial advice can come at a cost, decisions to take them can be overwhelming.

Question found in all related surveys.

This would be included as a dummy variable for asset ownership as a proxy for wealth.

Question found in all related surveys.

This will help create instruments under IV approach based on the financial experiences of respondents' siblings and parents. From the responses indicator variables will be created for siblings in worse and better financial situations. Alessie et al. (2011) propose these variables as suitable instruments because, while individuals cannot control a sibling's financial situation, they can learn from their sibling's financial experiences. What they learn is likely to improve their financial literacy but is not generated by their own planning behavior. In addition, another indicator variable would be created if respondents think their parents have good or immediate understanding of financial matters.

These instruments have been used in IV modeling of financial literacy and retirement planning in other developed countries (Alessie et al. 2011; Lusardi & Mitchell 2010)

Appendix 2

Table A1: Summary Characteristics of Demographics

Frequency Distributions of Demographic characteristics of the Survey

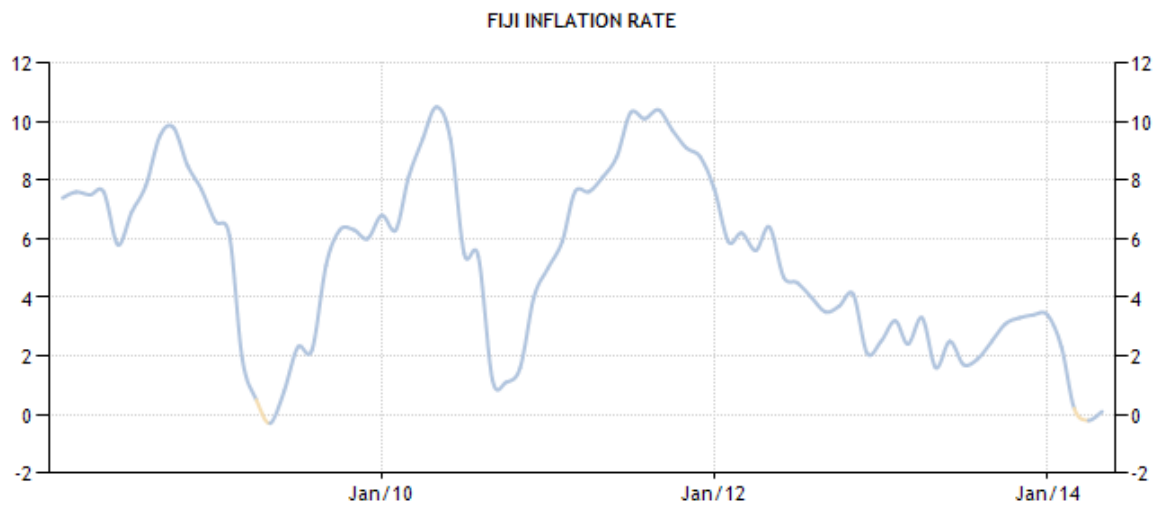
Variable	Frequency	Percentage
Gender		
Male	438	58.1
Female	316	41.9
Ethnicity		
iTaukei	285	37.8
Indo-Fijian	399	52.9
Other	70	9.3
Region		
Urban	455	60.3
Rural	299	39.7
Age		
< 35	515	68.3
36 – 50	176	23.3
51 – 65	58	7.7
> 65	5	0.7
Prime age 25 – 65	643	85.3
Marital Status		
Single	272	36.1
Married	424	56.2
Divorced or Separated	26	3.4
Widowed	21	2.8
De-facto relation	11	1.5
Education		
Less than High School	149	19.8
High School graduate	112	14.9
Some College (Cert. or Dip.)	177	23.5
University graduate (Bachelor)	185	24.5
Post-graduate	131	17.4
Employment Status		
Not in labor force*	67	8.9
Non-employed	9	1.2
Self-employed	154	20.4
Workers**	497	65.9
Retired	27	3.6
Income Bracket		
Income, Less than \$500 p/m	261	34.6
Income, \$500 - \$1,000 p/m	147	19.5
Income, \$1,000 - \$2,000 p/m	202	26.8
Income, More than \$2,000 p/m	144	19.1
Full sample	754	100

Note: * The *Not in labor force* category includes individuals that are not in the labor force because they are students, homemakers, unable to work due to disability or for some other reason. ** The *Workers* category includes part-time and full-time workers.

Table A2: Description of Variables used in Analysis

Variable Name	Description
<i>Financial Literacy variables</i>	
All three correct	Indicator variable that equals 1 if all the financial literacy questions were answered correctly, 0 otherwise.
Total number correct	Continuous variable that equals the sum of the number of financial literacy questions answered correctly.
Interest correct	Indicator variable that equals 1 if the interest rate question was answered correctly, 0 otherwise.
Inflation correct	Indicator variable that equals 1 if the inflation question was answered correctly, 0 otherwise.
Time value of money correct	Indicator variable that equals 1 if the time value of money question was answered correctly, 0 otherwise.
<i>Retirement Planning variable</i>	
Planner	Indicator variable that equals 1 if the respondent is a Planner, 0 otherwise.
<i>Demographic variables</i>	
Male	Indicator variable that equals 1 if the respondent is a Male, 0 otherwise.
Age	The age in years of the respondent.
Region, Urban	Indicator variable that equals 1 if respondent is from the urban region, 0 otherwise.
Marital status: Married, Divorced, Widowed or De-facto	Categorical variable that equals 1 if respondent is Married; 2 if Divorced; 3 if Widowed; 4 if in a De-facto relationship. Reference category: Single.
Education: High School graduate, Some College (Cert. or Dip.), University graduate (Bachelor) or Post-graduate	Categorical variable of respondent's highest education level: 1 if a High School graduate; 2 if attended Some College (Cert. or Dip.); 3 if a University graduate (Bachelor); 4 if a Post-graduate; Reference category: Less than High School.
Employment status: Self-employed or Workers.	Categorical variable that equals 1 if respondent is Self-employed; 2 if in the Workforce (Workers); Reference category: Non-employed.
Income level: \$500-\$1,000, \$1,000-\$2,000 or More than \$2,000	Categorical variable of respondent's income level: 1 = \$500-\$1,000; 2 = \$1,000-\$2,000; 3 = More than \$2,000; Reference category: Income Less than \$500.
<i>Other control variables</i>	
Number of Children: 1 Child, 2 Children or 3 or more Children	Categorical variable of respondent's number of children: 1 = 1 Child; 2 = 2 Children; 3 = 3 or more Children; Reference category: Don't have any children.
FinEd	Indicator variable that equals 1 if respondent has received Financial Education from some external source, 0 otherwise.
Savings Account	Indicator variable that equals 1 if respondent has a separate Savings Account, 0 otherwise.
Homeowner	Indicator variable that equals 1 if respondent owns a house, 0 otherwise.
Sibling(s): No older sibling(s) or Sibling in Worse situation	Categorical variable of respondent's older sibling(s) financial situation: 1 = No sibling; 2 = Worse situation;; Reference category: Better situation.

Figure 1: Fiji Inflation Rate Trend



Source: www.tradingeconomics.com / Reserve Bank of Fiji

